

JAN 30 1924

American Society of Heating and Ventilating Engineers  
and Kentucky Hardware Meetings Reported in This Issue.  
Editorial Index Page 13. Advertisers' Index Page 48.

Engineering  
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# AMERICAN ARTISAN and Hardware Record

Vol. 87. No. 4. 620 SOUTH MICHIGAN AVENUE, CHICAGO, JANUARY 26, 1924. \$2.00 Per Year.



KUEHN'S  
KORREKT  
KUTOFFS

## MILCOR COPPERED METAL

### Eaves Trough, Conductor Pipe and Trimmings

THE unequalled rust resisting qualities of Milcor Coppered Metal contribute such extraordinarily long life to products fabricated by the Milcor Process, that this scientific copper-bearing steel is gaining wide recognition as the most economical material, from the standpoint of service, for Eaves Trough, Conductor

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Corrugated, Round or Square

Kuehn's Korrekt Mitres

Milcor Ends and Drops

"Crimped" Gutter

"Interlock" Conductor Pipe

# Quit "handling furnaces"

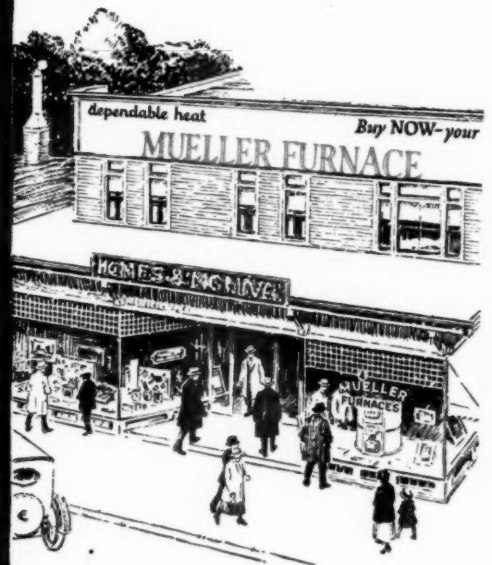
If you have been wondering why you can't make more money, while Bill Jones down the street is coining it, stop wondering and do business the way Bill Jones does it—the Mueller way. He may not be selling Mueller Furnaces. He may be selling dry goods or garden seeds. But he is doing it right, and that is the Mueller way.

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A furnace that stands alone; greater advertising assistance than you have ever known; an engineering service that is your customer's guarantee of dependable heat, and an easy payment plan so simple and convenient that it has already doubled the sales of some Mueller Dealers—there briefly, is the biggest story in the furnace business. Send for it today!



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Makers of Warm Air, Steam, Vapor and Hot Water Heating Systems, Garage Heaters, etc.

*easier to sell than to sell against*

Founded 1880 by Daniel Stern

Thoroughly Covers  
the  
Warm Air Furnace  
Sheet Metal, Stove  
and  
Hardware Interests

# AMERICAN ARTISAN and Hardware Record

Address all communications  
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### AN INVITATION

AMERICAN ARTISAN courteously invites and urges you to participate in the privileges and benefits of its Service Department. Any phase of the warm air heating and sheet metal industries or stove sales and window display questions may be profitably and instructively discussed in this department. If your problem is a knotty or technical one, submit it to the Service Department and secure the benefits of the opinions of other men. It is an exchange information department, and you are asked to relate your accomplishments and tell how you have surmounted difficulties. Wherever possible rough sketches or photographs should accompany the questions or suggestions, as they always make clear the points involved. Use this Service Department freely; it is yours.

ALPHABETICAL INDEX AND CLASSIFIED LIST OF ADVERTISERS, Pages 48-50-52

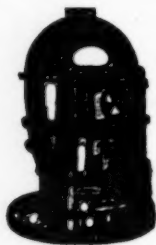




## Can You Use \$50.00

### How to secure one of the Cash Awards

1. Send us record of one of the five oldest heaters bearing the name International, Carton, Kernan, Wheeler-Palace, Pease, or Howard.
2. Year installed.
3. Tons of coal used per season.
4. Photograph of building.
5. Signed testimonial from the owner with permission to use for advertising purposes.
6. All information to be sent in by February 15, 1924.



The First Carton  
Furnace built in  
1847



Present Day  
Pattern of  
Carton.

**WE** will pay you \$50.00 if you will send us the record of the oldest International, Carton, Kernan, Pease, Howard or Wheeler-Palace Heater.

*In addition we offer Four Cash Awards of*

- \$25.00 for the record of the second oldest;
- \$10.00 for the record of the third oldest;
- \$10.00 for the record of the fourth oldest;
- \$5.00 for the record of the fifth oldest.

We will gladly make one of these checks payable to you as outlined under conditions governing the awards.

It's an opportunity for you to put \$50.00 into your pocket, secure information on the replacement market in your community, and to profit by the publicity.

### Who Has the Oldest Heater in Your Community?

Go over the list of old installations, your cleaning and repairing lists and pick out the heaters which have given the longest service. It will only take a few minutes of your time and

**Remember—there are five  
Cash Awards.**

**Put one of them in your pocket!**

**INTERNATIONAL HEATER COMPANY  
101 Park Avenue  
UTICA, N. Y.**

- ☐ We are interested in Cash Awards for oldest heaters.
- ☐ Will send you record of oldest heaters in our community.

Name .....

Address .....



# ***Every Sheet Metal Contractor Should Study the Information on Pages 28 and 29 and Make Use of It.***

Editorial  
of the  
Week

**M**ANY jobs which, from the standpoint of safety, durability, appearance and ultimate cost, ought to be done by sheet metal men and with sheet metal, are today done by other craftsmen and with materials of far inferior grade.

And one of the chief reasons for this very unsatisfactory condition is that the average sheet metal man has not sufficient confidence in himself, his business, his ability and the material with which he works and from which he makes his living, to sell its many excellent qualities to the people with whom he deals.

We see ornamental cornices put on buildings and when we ask what they are made of, the answer comes back, "terra cotta," "Indiana stone," "artificial marble," "artificial granite."

We see roofs covered with red cedar shingles, when anybody who knows anything about wood shingles also knows that not only are they extremely hazardous from a fire risk standpoint, but also extremely costly because no gutter will last that is hung on such a roof, because of the acid contained in the shingles.

We see so-called composition shingles covering roofs of fine buildings, although we should know that such roofing is not only less sightly, but much inferior in lasting quality than a good sheet metal roof.

We see slate and clay tile roofs, although neither of these will render good service when it comes to a matter of protection against snow and rain.

And yet—too many sheet metal contractors will not only not make a real effort to sell the excellent quality and ultimately low cost of a well laid sheet metal roof, but are actually soliciting business on composition, tile, slate, and any other kind of roofing!

Instead of going after him and showing him that not only are people being killed by falling pieces of terra cotta, but that a good metal

cornice, properly hung, will frequently outlast the building.

For these reasons American Artisan has decided to furnish its subscribers among the sheet metal contractors some real ammunition to use in their selling efforts.

This ammunition will consist of a series of double page spreads showing examples of good sheet metal work—roofing, cornice and other parts of buildings of various sorts—where sheet metal has taken its rightful place.

We say purposely, "where sheet metal has taken its rightful place," because when good sheet metal is properly applied there is no other material that will serve so satisfactorily.

The first of these double page spreads appears on pages 28 and 29 of this week's issue of American Artisan. Others will be published at frequent intervals.

Our readers are urged to make use of these illustrations when they have occasion to call on builders, architects and others and thus prove to them that for years good sheet metal, properly applied, has been used as a roofing material and for kindred purposes and has given excellent service at a cost which will compare more than favorably with any other material.

We are glad to state that everyone with whom we discussed this matter has approved of this new service which we are now rendering, and we acknowledge with gratitude the excellent cooperation which we have had from so many manufacturers in the matter of furnishing photographs, etc.

It has been suggested that these double page spreads be detached from each issue, framed and hung in the contractor's office or placed in a handy file so that they may be easily referred to when needed. We pass the suggestion on to our readers—it is a good one.

And now turn to pages 28 and 29.

## Random Notes and Sketches.

By Sidney Arnold

R. C. Walker, General Manager of the Meyer Furnace Company, Peoria, Illinois, sent the following letter concerning our mutual friend, George Harms:

"This is to advise you that our worthy friend, George Harms, had an argument with a Ford belonging to a friend last Sunday night and came out second best, having suffered a broken right arm. However, Mr. Harms was at his desk early Monday morning as usual.

"He is now having printed a small circular describing the cause of the accident in detail, which he hands to each and every one of his friends as they come to see him. This, he claims, saves time and makes a record of the accident, placing the information in the hands of his friends so they can read it over at their leisure and convenience."

Thinking that he had carried his facetiousness far enough, Mr. Walker ended his letter in a more serious vein:

"Putting all jokes to one side, Mr. Harms suffered terribly with this injury, but is continuing his work and expects to fill all his engagements as originally planned."

\* \* \*

"The fellow who is always talking in big figures," said Charlie Binns, of the Copper Clad Malleable Range Company, "reminds me of a story that I heard the other day:

"A real estate man was plainly worried, and his wife asked him to tell her about the deal. It seems that he had it fixed up to sell a man a loft building, a marble yard, with dock privileges, a factory site, and a summer-garden, and to take in part payment a block of frame tenements, a small subdivision, an abandoned lime kiln and a farm.

"He assumes a \$20,000 mortgage on the loft building," explained the real estate man, "and I take over a second mortgage on the subdivision. Get me?"

"I guess I get you," responded his wife. "But what is the hitch about?"

"Well, I want four dollars in cash."

\* \* \*

We had an election here in Chicago about seven weeks ago, and Charlie Glessner, of the Excelsior Steel Furnace Company, was a judge of election, the polling place being in a barber shop.

An Irishman entered and the foreman of the registry board addressed him:

"What is your name?"

He looked bewildered and answered, "James Flynn."

"Where were you born?"

It was plain that Flynn was annoyed, but he answered: "Ireland."

"How long are you in this country?"

Flynn, getting more indignant, answered, "Eighteenth months."

"Well, as you are only one year and a half in the United States you cannot vote."

"I don't want to vote—I want a shave," was the reply.

\* \* \*

John V. Patten, the Hero man of the furnace business, was in a quandary. He had a stenographer who was pleasant, good looking, quick, bright and had a lot of other good qualities, but she seemed to have no idea of what purpose commas, periods and other similar signs served.

Finally he decided to have a talk with her, and in his white-haired, fatherly way he addressed her thus:

"Miss Simpkins, you certainly have a bright smile on your face, and that dress is just about the niftiest one I have seen for a long while, and I notice that the rose on your desk just matches your complexion."

The poor girl didn't know what to say, for John had never spoken to her in that way before, but she

decided that he was merely in good humor and she did have a very pretty dress on. So she said: "Thank you very much, Mr. Patten, I am glad you are pleased with my appearance," and she sat down with her notebook ready, waiting for the dictation to begin.

But John did not start to dictate. His next remark was: "Yes, I like your appearance very much, but that is not what we pay you for. I made these pleasant observations to put you in good humor, so that you will heed the suggestion which I am going to give you now:

"There are certain rules of interpolation which must be obeyed, and you must from now on abandon your individuality in that respect and follow these rules implicitly if you desire to stay with us."

\* \* \*

Pete Johnson, of the Champion warm air pipe folks, wanted to sell his old car, so as to have a good excuse for buying a new one. So one day he got hold of a prospect and took him out to his garage where they looked the machine over.

Says Pete: "She isn't much to look at, but you ought to see her make a hill!" But the prospect was one of those skeptics and his comeback was: "Up or down?"

\* \* \*

### Climb Your Own.

The world is full of ruts, my boy,  
Some shallow and some deep,  
And every rut is full of folks  
As high as they can heap.

Each one that's growlin' in the ditch  
Is growlin' at his fate,  
An' wishin' he had got his chance  
Before it was too late.

They lay it all on someone else,  
Or say 'twas just their luck;  
They never once consider that  
'Twas caused by lack of pluck.

But here's the word of one that's  
lived

Clean through, from soup to nuts:  
The Lord don't send no derricks  
'round

T' hist folks out o' ruts.



## **American Society Heating and Ventilating Engineers Hold Successful Meeting, New York, January 22 to 25.**

**Homer Addams Elected President—Feldman Discusses Department Store Ventilation — Kratz Takes Up Heat Emission from Circular Radiator Furnace.**

THE benefits to the Warm Air Heating Industry from the December 4th meeting at Urbana, Illinois, and at the Sherman House, Chicago, meeting December 5th, are well known to all. At the Urbana meeting the subject of the test house was thoroughly threshed out and definite action taken. At the Chicago meeting simplification and kindred matters were gone into.

The Warm Air Heating Industry received an additional boost in New York when the American Society of Heating and Ventilating Engineers met in the Pennsylvania Hotel, January 22nd to 25th.

This convention was a complete success, and there were about ninety-five members in attendance.

The statics of fuel oil for domestic purposes was thoroughly gone into by A. N. Ballard.

At the Tuesday session the problem of properly ventilating a department store was taken up by A. M. Feldman. In illustrating his work, Mr. Feldman mentioned examples of department store ventilation, one in New York and one in Cleveland, both of which he had installed. He illustrated the manner in which the fresh air was taken into the basement, showing the trunk lines and ducts necessary for the insuring of a sufficient quantity of air. He even carried his discussion so far as to show how the problem of heating the space in the vicinity of doorways, where an almost continuous flow of frigid air was admitted, due to the constant ingress of customers, had been satisfactorily accomplished. The same fan and ducts, he explained, were used for ventilating purposes during the summer months.

Of particular interest to the Warm Air Furnace manufacturer

during the Wednesday session was the discussion by A. P. Kratz on Heat Emission from Heating Surfaces of Circular Radiator Furnace. Graphs and charts were used to an excellent advantage by Mr. Kratz in this work, and these with the entire address will appear in a later issue.

The Thursday morning and afternoon session were devoted almost exclusively to the proposed Code.

### **Election of Officers.**

The election of officers resulted in the following named men being placed into office for the ensuing year:

President—Homer Addams, New York.

Vice-President—S. E. Dibble, Pittsburgh.

Second Vice-President—William H. Driscoll, New York.

Treasurer—Perry West, New York.

### **Be a Warm Air Furnace Key Man in 1924!!**

The "key" man in the Furnace or Sheet Metal industry is the man without whose aid the whole industry would fall, and there are "key" men in every line of human endeavor. Every loyal, sincere, patriotic American citizen engaged in the building of warm air furnaces is a "key" man of that industry, in that upon his work in some degree depends the future of the business which supports him and the industry in general.

Be a key man in 1924.

## **Menk and Still Agree That Proper Warm Air Apparatus Will Heat Noland's Greenhouse.**

**They Say However, That More Definite Information Will Be Required Upon Which to Base a Solution.**

IN OUR issue of January 19th, page 25, L. C. Noland, Crary Tin Shop manager, inquired whether or not a greenhouse could be successfully heated with warm air. He submitted a diagram of the greenhouse to be heated, and stated that he thought the job could be accomplished.

To date we have received two suggestions on this problem, which are given hereinafter.

R. W. Menk, Excelsior Steel Furnace Company, Chicago, says:

To AMERICAN ARTISAN:

To drive air of a sufficient temperature to take care of the most distant portion of greenhouse from the plant will require a special arrangement of ducts in order to assure a proper temperature at that point. There will also be the possibility of extreme variance in air

temperatures unless some mixing damper devices are attached to avoid such a condition. There would also be required the continued operation of a fan and thermostatic control on the heating apparatus and if soft coal were used the thermostatic control might not be dependable.

I do believe it is possible to devise an apparatus of the kind mentioned, but would not assume the responsibility of such a layout without many more details regarding the conditions and on a purely experimental basis. It is an engineering problem pure and simple, and it would seem to me that if such a plant is desired, that the owner should place it in the hands of an engineer.

Hoping what I have said will give you some light on the subject, assuring you that I am always glad to do



what I can for the interest of the AMERICAN ARTISAN and the warm air industry, I am,

Yours very truly,

R. W. MENK.

F. R. Still, Vice-President American Blower Company, New York City, also very obligingly submitted the following comment:

TO AMERICAN ARTISAN:

I am taking liberty of referring the matter of heating the greenhouse to our Chicago office, with the request that one of their engineers there consult with you on this matter, as we should have more than just superficial knowledge of the conditions before we could advise you intelligently.

I might say that as a general

proposition, there is no reason why a greenhouse should not be as effectively heated by means of a furnace with a blower to circulate the air, as it can be heated by direct radiation. We have in several instances endeavored to interest some of the greenhouse engineers in the use of our humidifying apparatus used in connection with blowers.

We appreciate very much having you refer this matter to us, and hope the problem is one that will enable us to incorporate a plant in line with your suggestion, feeling sure that if such an installation is once made it will attract the attention of all the florists and lead to even better results than have previously been obtained.

F. R. STILL.

## What Has Been Your Experience with Oil Burners in Steel and in Cast Furnaces?

*Some Claim That Welded Steel Furnaces Are More Suitable Because They Obviate Danger of Gas Leakage.*

ONE of our subscribers in a southern state, who does not wish his name published, writes as follows:

EDITOR'S NOTE: We know of several instances where oil burners have been used successfully in cast iron furnaces—no gas or oily smoke leading through into the casing and warm air pipes.

In one particular instance, a cast iron furnace is being used by the manufacturer of a well-known gravity oil burner for demonstration purposes and not the slightest odor or indication of gas has been found in the house where the furnace is operated.

The only way in which gases might escape from the fire chamber into the casing would be that the joints had not been properly cemented. In such a case there would, of course, be a danger of gas leakage, but possibly no greater than if coal were burned.

Our subscribers are invited to write us, telling what their experience has been with oil burners with regard to the point raised by the

writer of the foregoing letter, or as to any other feature in connection with oil burners.

TO AMERICAN ARTISAN:

We have been installing all cast iron furnaces for the past fourteen years. In the last two years various types of oil-burning devices have been installed in old and new heaters, and we find that the cast iron furnaces are not tight enough to prevent the gases and oily smoke at times from entering into the air chamber and consequently in the house.

We are inclined to favor the steel welded furnaces to overcome this trouble, and would appreciate the expression of opinions from those of your subscribers who have had experience with the steel furnaces in which oil burners are installed for two or three years.

If you can bring up a discussion in your paper about this subject it would certainly be highly appreciated by the writer.

Thanking you in advance for whatever you might be able to do for us, we are,

SOUTHERN SUBSCRIBER.

## New Self-Cleaning Furnace Produced by Moore Brothers, Joliet, Illinois.

A Self-Cleaning furnace that is self-cleaning in every sense of the word, is what Moore Brothers Company, Joliet, Illinois, announce they have achieved in the advanced and improved type of furnace which they have brought out this year, an illustration of which is shown herewith.

The Self-Cleaning Heat Intensifier, which takes the place of the old ring-type radiator, is a single casting, one piece in every respect even to the smoke collar which extends through the casing. The



The Self-Cleaning Furnace.

Moore Heat Intensifier is so constructed that the flames come in contact with its entire surface, a feature heating experts will appreciate. There is no place where soot and ashes can clog to obstruct the flues, thus making it absolutely self-cleaning.

The moisture pan in the new Moore furnace is put up over the feed door instead of under it. The slotted anti-carbon firepot is used. This firepot was originated by the Moore Company and is of the same construction that has been used in their Moore's Air-Tight Heater for years. The advantage of such a firepot is that it burns the soot, smoke and gases, ordinarily wasted up the chimney.

In addition to these outstanding features the Moore Company have built into their new product all of the time, labor and money-saving features so much in demand by the furnace buyer of today.

They announce that their new furnace catalog, No. 41-E, is ready for distribution.

### Valuable Installer Data in New Utica Heater Company Catalog.

The warm air method of artificially heating a dwelling, or any hall or room where large numbers of people congregate for long pe-



riods of time, is by test proved to be the most healthful and economical so far discovered. In our January 19th issue, pages 21 and 22, there appears an article by the Chicago Department of Health which will substantiate that statement.

The Utica Heater Company, Utica, New York, has recently released its new Warm Air Heater catalog No. 24.

The Utica Heater Company ranks with the foremost in the manufacture of warm air heating appliances. The Superior Pipe, the Ned Idea Pipeless, the Super-Smokeless, made in both pipe and pipeless furnaces, and the New Idea Re-Circulator are all well known and highly esteemed in the warm air heating field.

The new catalog, in make-up and content, is indeed in keeping with the customary practices of the company. The new developments in the warm air furnaces manufactured by the company are all clearly and extensively depicted, both graphically and verbally.

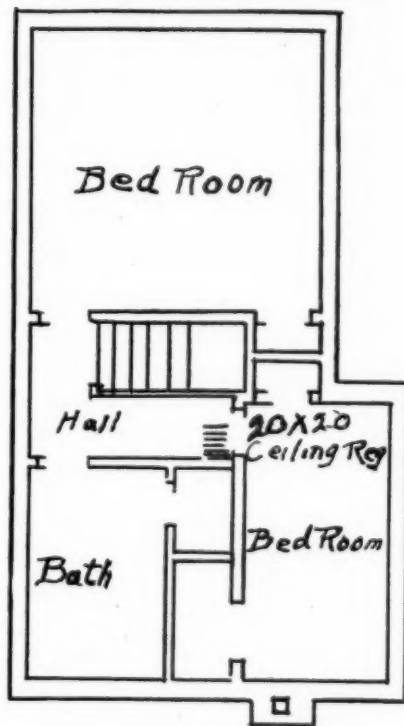
One of the particularly interesting and valuable features of the catalog are the Rules and Tables for Warm Air Heating Work and the General Rules for Good Furnace Work, which are neatly incorporated into a condensed but explicable theme in the back pages of the catalog.

The catalog contains thirty-six pages exclusive of the covers, these latter being attractively decorated in orange and black.

Don't fail to write for this catalog. It contains information which every installer needs.

### G. A. Wimmer, Ohio, Suggests Using 10-Inch Pipe for "Sub- scribers" Living Room.

In response to G. W. Turton's appeal in our issue of December 22, page 13, for assistance with "Subscriber's" problem in warm air heating, G. A. Wimmer, —, Ohio, has sent in pertinent descriptive



matter which he feels certain will do the trick for "Subscriber."

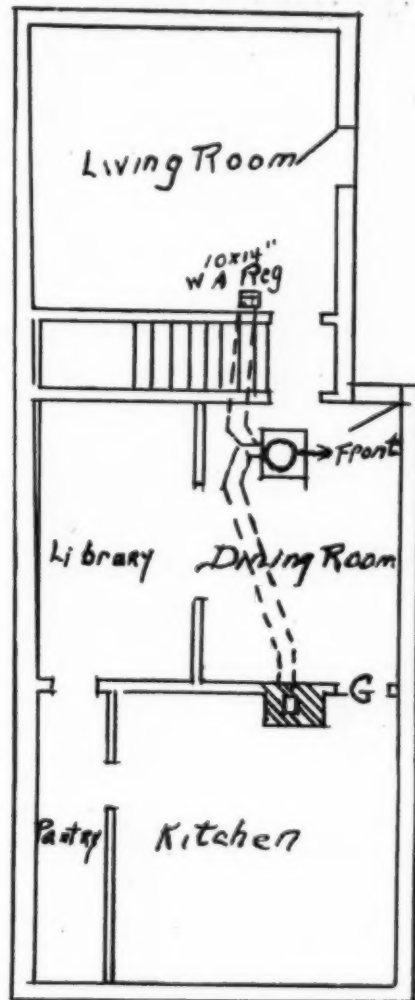
To AMERICAN ARTISAN:

We are mailing a plan of Mr. Subscriber's home, with suggestion toward making an adjustment on his pipeless furnace.

The location of the main register is correct. To heat the living room,

a 10-inch pipe ending in a 10x14-inch register is required. The positive should be fastened tight on top of the radiator, otherwise it will draw cold air.

To heat kitchen to a higher temperature, place 16x32-inch wood grill over the door marked G. The



transom may be used also, and should be hinged from the side and swing into the room.

To reduce the heat in the dining room, place 20x20 caloriscopes in the ceiling of the dining room, coming out in hall on second floor, as shown on plan. By installing this register you will receive a temperature of 70 degrees in zero weather in all rooms upstairs.

The three ceiling registers that are now in I should suggest closing. If a careful test were made, you would find cold air coming down instead of warm air rising.

Care should be taken in facing the pipeless furnace, and I should suggest it to be fronted as marked on

plan with smoke and positive pipe off of rear of furnace.

If the house owner makes these changes, I feel sure that his trouble will all be over.

I obtained my knowledge from

the Monitor Stove Company, where I was employed as an engineer, and in the year of 1920 I located 20,000 pipeless furnaces.

G. A. WIMMER.

—, Ohio.

## **A. E. Herrold Submits Semi-Pipe Plan for Heating Mr. Rose's House.**

*Thinks Pipeless Will Not Work Because of Drafts That Cannot Be Overcome, Causing Papa to Take Cold When He Removes His Shoes.*

THE January 5th issue of AMERICAN ARTISAN, page 17, contains a solution by C. L. Thompson to Mr. Rose's problem, originally appearing in the October 20th issue and subsequently taken up by numerous readers.

In the January 12th issue, page 16, Mr. Turton made further contribution, and now, after having read the various solutions offered, A. E. Harrold, 122 South Howell Street, Hillsdale, Michigan, has come to the rescue.

Mr. Herrold states in advance, however, that he does not wish to rub anyone's fur the wrong way, and that he is very fond of dawgs. To AMERICAN ARTISAN:

I am a constant reader of AMERICAN ARTISAN, and I am always interested in the discussions on furnace installation.

I have been reading the articles on the problem submitted by Mr. Rose, which to me are especially interesting.

There have been a great many things said on this particular job pro and con, and I agree with some and disagree with others; as yet I have kept still, but think it is about time I say my little piece, and I hope I don't rub the fur the wrong way on any one or kick any one's dawg around, as I am especially fond of dawgs myself. I haven't had as much experience as some, but still I know a thing or two about furnace installation, and here goes.

First, let's get squared away so that we may know what we are talking about; in fact, let's call black black and white by its right

name, and in order to do it I am going to define my terms in advance.

A pipeless furnace is exactly the same as a pipe furnace in so far as the furnace itself is concerned, the only difference being in the construction of the casing. I am sure we will all agree on that; therefore, a pipeless furnace casing must be so constructed as to admit of taking the return air in as well as letting the warm air out of a duplex register connected to the top of the casing, and the name will not admit of any pipes whatsoever, for the connection of a pipe will serve to make the job not a pipeless job, but rather a semi-pipe job; pipeless means without pipes. Now there are three kinds of installations being made, viz., *pipe*, *semi-pipe* and *pipeless*, and it seems to me that the gentlemen have confused the same in their discussion of Mr. Rose's job, as they are doing a lot of talking about pipeless when they really mean semi-pipe.

To take up Mr. Turton's article in the January 12th issue, I should say, as did the so-called stand-patters (it can't be done) with a pipeless, but I must also say it can be done with a semi-pipe job, as Mr. Turton proposes to do. I have done the same thing many times and never knew it to fail where properly installed.

As to Mr. Thompson's offer to gamble on his semi-pipe job against any pipe construction, I must say he is taking in a lot of territory, for I can install a pipe job in that house that will take his money (and I know what I am talking about). I

can install the job and give the house owner independent heat in every room in the house and I will not have the registers in the middle of the floor either, nor in any doorway where they will have to walk over them every time they go from one room to another, and I'll do it just as efficiently and with no more fuel than his job will take; in addition will guarantee to keep the basement cool enough for the house owner to store his potatoes in the same room with the furnace.

I agree with both Turton and Thompson that many houses can be heated with semi-pipe furnaces, but I have found that but very few can be heated satisfactorily with a pipeless; there are a great many disadvantages to a pipeless furnace that cannot be overcome and one of them is the fact that you cannot get away from the draft along the floor, which if father takes his shoes off in the evening is liable to cause him to take cold, and the reason for this condition is that the return air to the furnace all has to go to the same place, namely, the duplex register.

A great deal better job than this is what I call a three-way job, which is installed something like the pipeless with the exception that I take all the duplex register for warm air and I bring the return air back to the heater through as many cold air pipes as is necessary, never less than two. This installation delivers a larger supply of warm air to the house and distributes it without the draft along the floor. A robber or booster pipe may be connected to this type of installation the same as to the pipeless.

Now, to take up the pipe job, the great trouble with pipe installation today, as well as in the past, has not been with the furnace or with this particular method of installation, but rather due to the lack of knowledge on the part of the installer. Entirely too much guesswork is done, both as to where the registers should go and as to the size of furnace necessary to heat the particular job. There has been from time to time a lot of discussion as to the amount of pitch to give the pipes,



the kind of hood to build and the best way to take the pipes off the hood; but these things are really secondary in the consideration of the installation. One fellow will claim his particular furnace is a better heater than someone else has, but to come right down to reality there are but three differences in furnaces; namely, *quality of material, plan of construction, amount of repairs necessary to keep them in good condition.* The heating of the house depends entirely upon the installer.

To determine the size of heater there is a formula that I have used for years with never a failure, and that is this: To  $\frac{3}{4}$  the exposed glass surface in square feet add  $\frac{1}{6}$  the exposed wall surface in square feet, add  $\frac{1}{100}$  the cubical contents in cubic feet.

This number will tell you the number of square inches in cross section area of the pipe large enough to heat that particular room. For exposed northwest rooms or second floor rooms add 10 per cent; now, when you have found the size of the pipes necessary to heat each room in the house, add the areas all together and this will give you the size furnace required.

The secret of warm air heating revolves around the principle of 14.7 pounds normal air pressure in the house; that is, 14.7 pounds to the square inch, and you cannot get any more air into the house than is already there, so the obvious thing you must do is to circulate that air, and you can do that only by taking out of the rooms to the furnace as much air as you wish to put warm air into them. If this formula is followed and the return air ducts are so placed that the cold air can get to them, you will get the heat whether you have 1-inch pitch to the foot in your warm air pipes or not.

There are some things to be taken into consideration in installing a heater besides the convenience of the installer, in order to have a satisfactory job, among them being the location of the registers so as to put the housewife to as little incon-

venience as possible and also to try and keep the pipes high enough in the basement so that when father goes down to fire the darn thing, he don't bump his head and lose his religion. There is a great deal more that can be said on this subject and if any one wants to discuss it further through AMERICAN ARTISAN, I shall be only too glad to answer any question that I can.

Yours for better furnace installation.

A. E. HERROLD,  
122 South Howell Street.  
Hillsdale, Michigan.

### ***Issues Booklet on Proper Furnace Firing,***

"Are you burning too much coal? Yes? Well, then read the little booklet issued by the Consumers Company, retail dealers in coal," says the Chicago Daily News, January 15, 1924. "Getting the Most Out of Your Coal Pile," which tells how, when, where and why to economize.

The booklet was written by L. R. Taylor and tells in succeeding chapters how to regulate warm air, hot water and steam heating plants, why, and gives the theory of the plants in such manner as to explain what happens when various things are done. It also tells how to fire the various furnaces with different fuels—bituminous, anthracite, coke, smokeless, etc.

The following ten commandments to the householders are displayed in the booklet as mandatory if the furnace feeder would obtain best results with lowest costs:

"1. Should the fire go out during the night, build a new fire on top of the unburned coal in the fire pot. It will burn down to the grates and save you just that much fuel.

"2. Keep your heater free from soot. One-eighth inch soot covering steam or hot water boiler surfaces reduces efficiency 28 per cent.

"3. Keep house temperature at average of 70 degrees, instead of 75. With average outside temperature of 40 degrees a saving of 17 per cent in fuel consumption is obtained. Use the automatic regulator.

"4. Cover the hot water or steam boiler and piping in the basement, unless you want to waste coal.

"5. See that the grate has no warping or broken places for coal to drop through. Unburned coal in the ashes is wasted coal.

"6. Never shake or disturb a very low fire until you add and ignite a little fresh fuel. Do not shake grates violently or you will lose unburned coal into ash pan.

"7. Use check damper for the ordinary daily regulation of fire. Never use lift damper to regulate fire. See that all dampers are tight fitting.

"8. Never try to reburn ashes. They chill fire and require good coal to keep them at the same temperature as rest of the fire. Get rid of ashes daily. Make regular inspections of your heating plant?

"9. Take out coal from the pile needed for each day. Then moisten it. It will give better results.

"10. Get the right coal for your heating plant. Factories require different fuel than houses or apartments. You may be wasting your money on the wrong fuel."

### ***Installer Educational Propaganda Admitted to Be Needed.***

The warm air furnace manufacturers are unanimous in their opinion that it is to the interest of all concerned to carry on educational propaganda among installers and building contractors, with a view to installing furnaces adequate to the heating requirements of a dwelling.

They also believe that courses in warm air furnace installation should be established in technical and trade schools.

Many of them have gone so far as to carry on special educational campaigns with their installers, as has been revealed by the questionnaire sent out by AMERICAN ARTISAN just previous to issuing its 1923 Warm Air Furnace Special.

This attitude augurs well for the progress of the industry and it will soon be on the road to progress where it rightfully belongs.

# Building Angle Iron Racks for Sheet Metal Shop Matter of Individual Taste, Kothe Finds.

*Answers Inquiry for Sheet Metal Shop Rack Blue Prints  
Asked for Recently by Deweese Radiator and Repair Shop.*

Written Especially for AMERICAN ARTISAN by O. W. Kothe, Principal St. Louis Technical Institute, St. Louis, Missouri.

**R**ESPONDING to the inquiry of the Deweese Radiator and Repair Shop, Fort Wayne, Indiana, I submit the accompanying drawings which will give some idea of how iron racks can be made from angle iron. Making iron racks is more often a matter of individual taste. Fifty men will make fifty different designs. Every individual gives his pattern some particular twist to suit his own idea of things.

Figure 1 shows one type of design for common work bench order, where five or six shelves are made of sliding sheet iron in storage. If the angle bar shelves are not de-

sired, round bars can be used similar to those shown in sketch "A." These details can be changed for the work required of them, although the angle bar shelf makes a stiffer job and does not deflect so readily as round bars would.

Where these racks are made up to eight or ten feet high the problem then becomes a different matter; every bar must be made heavier, and a good foundation must be provided. Good steel has a resistance against crushing of 95,000 pounds per square inch. Our corner angles have an area of 1.73 square inches, and if we conclude

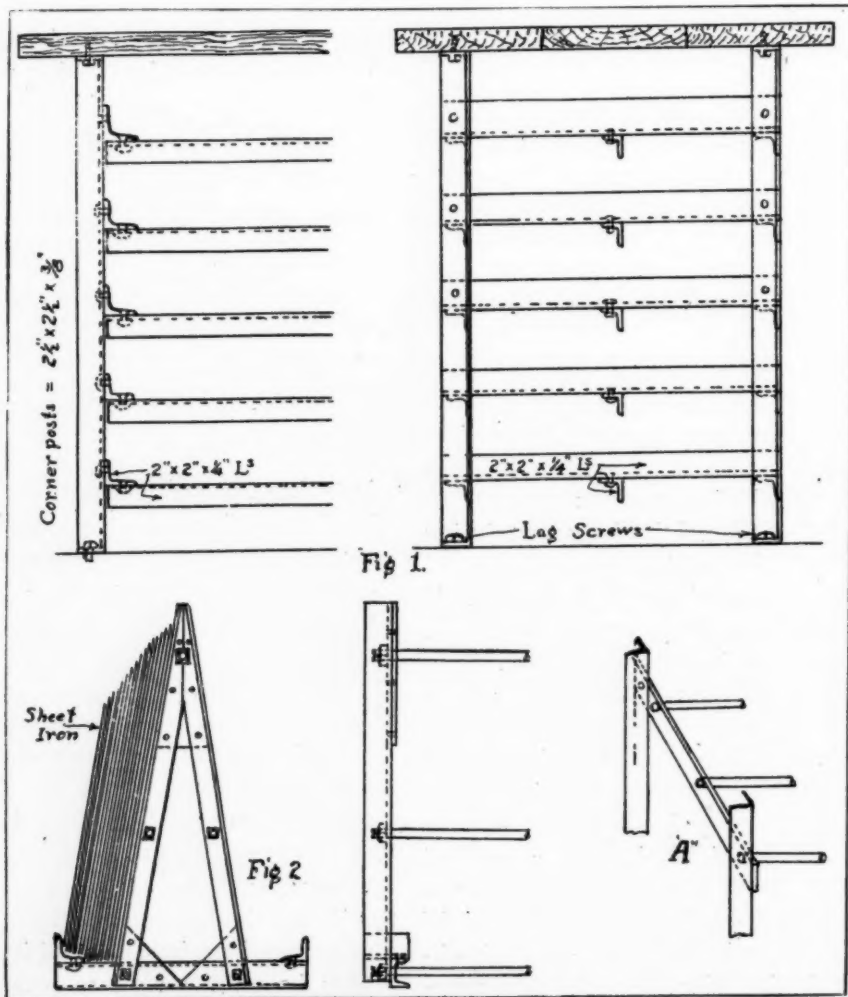
that angle bar steel is not so good as the higher grade, we can accept 75,000 pounds per square inch. Then,  $75,000 \times 1.73 = 129,750$  pounds, which is the weight one leg would stand before crushing. Allowing a factor of safety of say 5, then dividing, we have  $129,750 \div 5 = 25,950$  pounds. That could be allowed on each corner angle. This will hold up everything ever put in by any ordinary shop. But where high racks are made, they must be braced diagonally, because then the trouble will not be so much from crushing as from deflecting. But when braced properly and held in position, the weight they can support can be easily determined.

Another type of iron rack is shown in Figure 2. This is a simple construction, where about three standards are used per length of sheet. But the process of tying and guying, these racks are very serviceable for ready usage, but are sometimes hard to keep straight. No doubt a thousand other readers would have a thousand other ideas on such construction, but that does not matter, since the idea is to make a rack to perform what is expected of it.

## Gross Organizes Sheet Metal Local at Aurora, Illinois, With 11 Members.

A local Sheet Metal Contractors' Association was organized recently at Aurora, Illinois, by Fred C. Gross, Secretary Sheet Metal Contractor's Association of Illinois. Secretary Gross states that there were eleven charter members.

When you make people like you, you make them like the store in which you work, and then they like to go to that store to trade.



Working Drawing of Pattern for Angle Iron Racks.

## Koenig-Bowers Hardware Company, Iowa, Builds Up Profitable Radiator Repair Business.

*This Work Helps to Solve the All-Year Labor Problem As Well as Netting a Handsome Return.*

Written Especially for AMERICAN ARTISAN by Edward C. Haas, of Le Mars, Iowa.

**M**AKING the winter hours fly is not a light occupation, but the principle object of the Koenig-Bowers Hardware Company, Le Mars, Iowa.

This progressive and rapidly growing firm has solved the problem of keeping the men employed during the winter months and at the same time making their sheet metal department net them a handsome profit.

Three years ago the Koenig-Bowers Hardware Company, Le Mars, Iowa, found that the space allotted to their rapidly expanding sheet metal and furnace business, was crowded to such a degree that it would not properly house that department. At the same time, in view of the large output of furnaces, furnace fittings, and registers, this firm became distributors for the L. J. Mueller Furnace Company, Milwaukee.

In order to meet this double demand for space, the Koenig-Bowers Hardware Company erected the large and substantial brick structure shown in the accompanying photograph. The building is convenient to the hardware store, being located directly across the alley to the north, and its dimensions are 50x150 feet.

The commodious interior of the structure, allows space to make satisfactory divisions of the various departments. Furnaces, fittings, registers and other supplies, which are purchased in carload lots by this enterprising firm, are economically and neatly arranged. The front, consisting of the main floor and balcony, is reserved for the sheet metal department and work room because of its special lighting advantages.

Peter Ehlinger, a member of the firm, has personal supervision of the sheet metal and furnace depart-

ments. He is an expert heating engineer and mechanic, and by giving all matters his personal attention, he keeps the force working at its greatest efficiency.

Asking Mr. Ehlinger as to the scope of the work done in so large a shop, he replied:

"You know our work is limited in a town of this size, but we reach out a long way. We are equipped to do efficiently any sheet metal or heating and ventilating jobs that present themselves, and frequently our workmen are engaged on good-sized contracts scores of miles from home. As a matter of course, we employ a good deal of extra help at times, in addition to our regular force. Improved furnace installation required skilled workmen and high-priced ones, too.

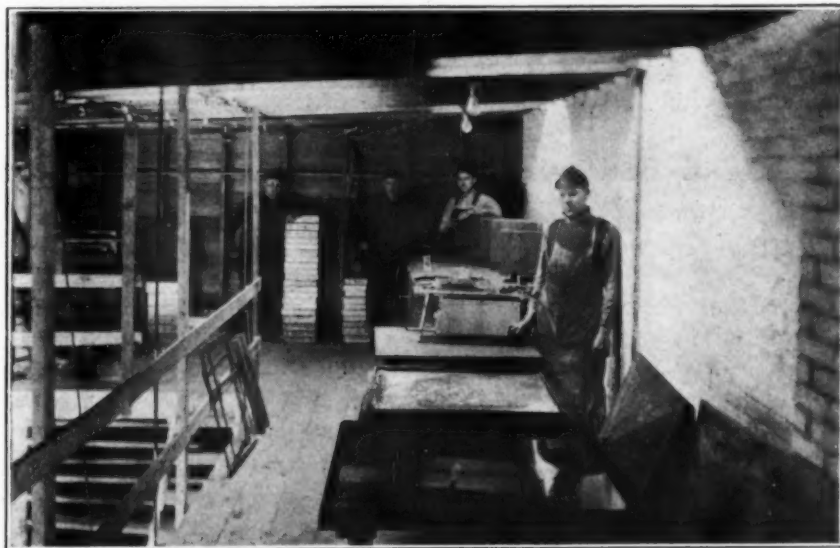
"Our regular force, we try and keep with us the year through, and that very fact confronted us with a big problem that I want to speak about. The problem I refer to is a seasonable one; it confronts every firm of our status at the outset of winter each year. It is that period when practically all of the outside work and the big jobs are cleaned

up. Through the winter months numerous small repair jobs begin to dot the daily calendar, but not any worthwhile jobs. To be sure, we have a good many unfinished jobs, and we also keep some of our men busy, getting out galvanized products, such as tanks, troughs, chicken waterers and the like. Nevertheless, our firm was angling for something more substantial, a real money maker for winter, and we found it."

Knowing of Koenig-Bowers success in solving a question which a large percentage of sheet metal men face annually, it may be worth while for others to know, for even though they may find it impracticable in their particular locality, there are other opportunities that possibly hold just as great a future as the one Mr. Ehlinger tells about.

Continuing his conversation Mr. Ehlinger said: "I told you our problem was seasonable. Well, that very fact gave us the idea which has been such a big factor in our business."

"This good state of Iowa is rich in automobiles, one to every third or fourth person at the present time. Automobiles have radiators that wear out, that break, and in this land of 30 degrees below in the winthings happening to a radiator, makes it necessary to repair or supply a new one. We knew that no firm in this section of the country was in position to do this work; why should not our firm? We did it, and



View Showing Koenig-Bowers Radiator Hospital and Some of the Doctors.



by adding a new industry to our business, have developed it to such an extent, that it is now a good sized business of its own."

Leading the way to the department given over to radiator work, Mr. Ehlinger pointed out the different pieces of machinery and equipment utilized in radiator manufacture. Explaining the function of each machine, he pointed out the arrangement beginning at the corner where the stock brass was kept. Adjacent to the brass used for this work, stood the cutting machine, which cut the brass into desired lengths, from whence it was passed on to the forming or seaming machine. Here is one operation the brass is bent into tubes and seamed, preparing it for the large forming table, where the core is built up ready for the soldering operation. Two large tanks make up the necessary equipment for this; first the core is dipped into an acid solution, and from there plunged into the molten solder bath. This last process is a very particular bit of skilled workmanship.

"We have an expert who attends to this soldering process, for the core must be immersed for just the



Exterior View of Koenig-Bowers Sheet Metal Shop.

right period of time. Too short a bath, or too long a one, will ruin the job. Whenever possible, I try to be on hand when this is done," Mr. Ehlinger went on to say. "After the soldering process is over, the finished core is tested against air and water leakage and is then ready to go on the stock shelves." people do not practice patience when

### Arthur B. Glessner Finds ARTISAN Valuable—

#### To AMERICAN ARTISAN:

We can only echo the opinion of most of your readers that your journal is a very important factor in our business equipment, and that we have found each issue of considerable value because of the helpful and reliable information contained therein.

Sending you the season's greetings, we are

Very truly yours,

The Excelsior Heater &  
Supply Company,

Arthur B. Glessner, Mgr.

St. Paul, Minnesota,  
December 14, 1923.

they have frozen and ruined an expensive radiator.

The stock room, displayed completed cores for all standard automobiles and tractors, each kind being kept together in wall cases behind closed doors.

"We have got to be ready to deliver a radiator on instant notice;

"You will note that we also have a complete stock of tanks and other parts, so that if more than the core is wanted, we can furnish the radiator complete for attaching to the car."

the growth of such a department within a three-year period, and upon being asked as to the results, whether satisfactory or otherwise, Mr. Ehlinger replied: "All of this represented a little investment to commence with, but the large volume of business and its profitable nature, have been more than gratifying to the firm; our venture along this line, exceeding our most optimistic hopes. The first year we took care of nearly six hundred jobs, the total now has reached several thousand and it is not uncommon to receive an order from some town several hundred miles distant. This cold spell with 30 degrees below zero, is now taxing us to our maximum capacity in the radiator department, so our workmen are not worrying over what to do tomorrow. This is what we like. It makes the winter hours fly."

EDWARD C. HAAS.

### United Sheet Metal Contractors of Chicago to Meet Thursday, January 31.

Members of the United Sheet Metal Contractors of Chicago are informed that a meeting of that body will be held in the office of AMERICAN ARTISAN Thursday, January 31, 1924.

Matters of vital importance will be brought up, and it is important that you be there. This means you and your neighbor!!

### Put Yourself Whole-Heartedly Into Your Work and Reap Full Measure of Reward.

Resolve that, whatever you do, you will bring the whole man to it; that you will fling the whole weight of your being into it; that you will do it in the spirit of a conqueror, and so get the lesson and power out of it which come only to the conqueror.

A clerk will not be fired as quickly for making mistakes in change and stock handling as for being careless in his appearance and in his treatment of customers.

Another corner of the radiator room was in charge of an expert repair man, whose duty it was to look after all radiators where the breakage was not sufficient to require a rebuilt job. All kinds of modern soldering equipment was at his disposal, so that the most delicate work could be neatly and efficiently done.

One could not help but marvel at

## Like Father, Like Son, and Now It Is Like Grandson in This Vermont Family of Sheet Metal Men.

*J. H. P. Mossey Knows How to Treat Sheet Metal So That People Think It Is Fine Wood.*

**W**HAT would you think, ordinarily, that the lamp and the stand shown in Figure 1 were made of if you were not a sheet metal man?

Quite right—they are *not* made of wood, the material under the lacquer and finish being plain, ordinary galvanized iron.

They were made by J. H. F. Mossey, St. Albans, Vermont, a sheet metal contractor and a son of one, and there is a young son who is to be the third in line as a sheet metal man.

Mr. Mossey writes as follows:  
To AMERICAN ARTISAN:

In reply to yours of December 27, 1923, asking me for a little story about how I went about making my lamp and stand, will say that it is much harder for me to tell stories than making up the lamps.

My father was considered one of

the best tanners of his day, and, naturally, his wish was for me to learn the trade, which in his day was the old way of tinsmithing. He is 75 years old and still at it.

My aim has always been to be still better than he was, so when I went to work I decided not only to try to see what I could do, but how well I could do it. I also took pains to make patterns for all kinds of work I could think of.

I used to read the "Cubs' Corner" in AMERICAN ARTISAN with much interest, and you have some fine articles now every week which are so interesting.

Now, as to the lamp making, the idea came to me about two years ago when I went to California. I saw many kinds of lamps and fancy things made of different material, and the result was that I thought I could make a lamp of galvanized iron that would look fairly good, so I took up my drawing tools and first made a design of what I thought I wanted. Then I made a full size drawing. After that I made the patterns, which was quite a long job. I used the same methods as one would use making cornice angles. The hardest part is to proportion the article to be attractive. Of course, the lamp or stand can be made in various shapes to fit one's taste.

The lamp has over 100 pieces besides the shade. All joints are butted and soldered inside. The outside was well filed and sanded and a coat of sizer put on, then a coat of ground color, and then I stained it to look like mahogany. And I will say that some good carpenters were fooled. They would not believe it iron until they would knock at it. The shade I made of Number 9 tinned wire and my daughter covered it very tastily with Japanese silk and gold fringe, and I will say

it makes a lamp good enough for any poor tinker. I have a cluster of four lamps of different colors, and that helps a whole lot to show it up at night.

The other lamp is made of heavy old sheet copper I picked up among the scrap. I annealed it and polished both sides and spotted it all over. Then I made it up of the de-

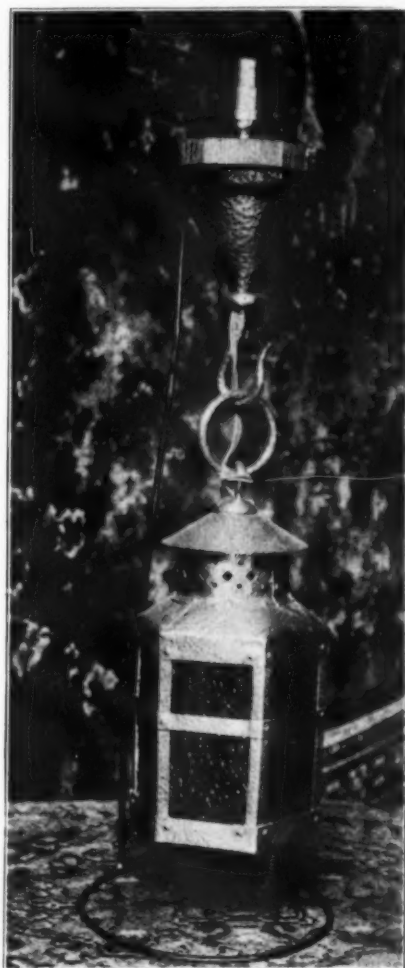


Figure 2.—Hall Lamp Made of Hammered Copper.

sign given. The glass is of cathedral amber. The hook and ring and ring flanges were made of 1/2-inch round copper formed to the different shapes. This lamp is about 24 inches high and makes a nice lamp in my hall.

I have many other things which my son and I make up after our day's work just to see what we can do. We have copper and brass vases, urns, candle sticks, Turkish coffee pots, jewelry boxes and a variety of other things.

I try to keep busy at something all the time. We are now working



Figure 1.—Piano Lamp and Stand Made of Galvanized Iron, Finished in Mahogany.

on something else and if we succeed, I will send you pictures of it.

I would like to see someone start some articles on the making of hollow metal windows or frames.

Thanking you for past favors, I remain,

Respectfully,

J. H. MOSSEY.

St. Albans, Vermont, January 2, 1924.

### ***Detroit Sheet Metal and Roofing Contractors Meet at Fort Shelby Hotel January 14.***

Another interesting meeting of the Detroit Sheet Metal and Roofing Contractors' Association was held at the Fort Shelby Hotel on Monday evening, January 14. Following a splendid dinner the meeting was called to order by President W. W. Candler. The reading of the minutes and report of the Treasurer were dispensed with because of the absence of Secretary-Treasurer D. M. Marshall, who was taken suddenly ill the Saturday previous. Mr. Marshall's condition is not serious and he expects to be back on the job again in a few days.

This being the annual meeting, election of officers was proceeded with. A motion was made, seconded and carried that the present officers hold office for another year.

They are: President, W. W. Candler; Vice-President, W. M. Sullivan, and Secretary-Treasurer, D. M. Marshall.

Following a fine entertainment, in which A. J. Berschbach took an important part, the meeting adjourned.

Speakers for the state convention, to be held in Lansing, for the furnace session have now been selected. E. C. Taylor, of the Premier Warm Air Heater Company, Dowagiac, will speak on "Modern Methods of Salesmanship for the Retail Furnace Dealer." John P. Wagner, of the Furnace Fan Corporation, Dowagiac, will give an address on "The Power of Educational Research Work."

A full discussion will follow both talks. Harry Rhodes, Grand Rapids, will act as quizmaster of this

session, and the speakers will be asked to take the witness chair for questioning by the audience.

### ***Advance Snip Circular with Valuable Contents Issued by Manufacturers Brush, Cleveland.***

Sheet metal men cannot fail to be interested in any newly discovered appliance which will facilitate the cutting and shearing of sheet metal. The cutting edges, the leverage, the roominess of the thumb and finger holes and the ability of the tool to perform the task for



Showing Advance Snip.

which it is built are all factors of primary importance in selecting the tool.

The Manufacturers Brush Company, 1950 West 114th Street, Cleveland, Ohio, has recently issued a circular describing their new Advance Snip, built especially for cutting difficult circles, curves and angles.

The circular explains this device in full detail and a knowledge of its capabilities is well worth attaining.

Write for further details.

### **Notes and Queries**

#### **Gasolene Gas Machine.**

From Seibel Hardware Company, Sigourney, Iowa.

Kindly inform us who manufacture a gasolene gas plant suitable for cooking and lighting purposes.

Ans.—Suburban Gas Company, 7880 Morrow Street, Detroit, Michigan; Tirrill Gas Machine Lighting Company, 50 Church Street, New York City, and Incandescent Light and Stove Company, Madisonville, Cincinnati, Ohio.

#### **Fluted Metal Columns and Pilaster Caps.**

From Charles L. Gatz, 804 Washington Street, Gary, Indiana.

Please advise me who manufactures fluted metal columns and pilaster caps.

Ans.—Friedley-Voshardt Company, 733 South Halsted Street, Chicago, Illinois.

#### **Adjustable Wooden Scaffold Brackets.**

From Cahill Sheet Metal Works, 15 West Third Street, Sioux City, Iowa.

We should like to know who makes adjustable wooden scaffold brackets, such as are used in the erection of metal ceiling.

Ans.—National Ladder and Scaffold Company, 1438 West Van Buren Street, Chicago, Illinois.

#### **"Pennant" Gas Stove.**

From Homan Furniture Store, 1139 South Homan Avenue, Chicago, Illinois.

Who makes the "Pennant" gas stove?

Ans. — Kappler-Fox Foundry Company, York and Thompson Streets, Philadelphia, Pennsylvania.

#### **Second Hand Tinnerns' Tools.**

From Vincent Mistretta, 1006 South Jeanette Street, Des Plaines, Illinois.

Will you kindly inform me where I can get second hand tinner's tools; also cornice brake?

Ans. — Maplewood Machinery Company, 2547 Fullerton Avenue, and B. L. Saltzman, 524 West Van Buren Street; both of Chicago, Illinois. Also refer to the Wants and Sales columns of AMERICAN ARTISAN AND HARDWARE RECORD under "Tinnerns' Tools."

#### **Square Tin Cans.**

From Mr. A. L. Honeker, 417 Cedar Street, Wallace, Idaho.

Where can I secure square tin cans made to hold liquid of one gallon capacity?

Ans.—American Can Company, 104 South Michigan Avenue, Continental Can Company, 2201 South Halsted Street, both of Chicago, Illinois.



## Canadian "Gifts of Utility" Window Display Greatly Stimulates Christmas Sales.

*E. Rahn Wins Second Prize in AMERICAN ARTISAN Window Display Competition Which Closed January 12.*

**C**HRISTMAS in Canada, too, means greater opportunity for the hardware retailer. This is proved by the accompanying window display made for the Bond Hardware Company, Guelph, Ontario, Canada, by E. Rahn. Mr. Rahn writes as follows:

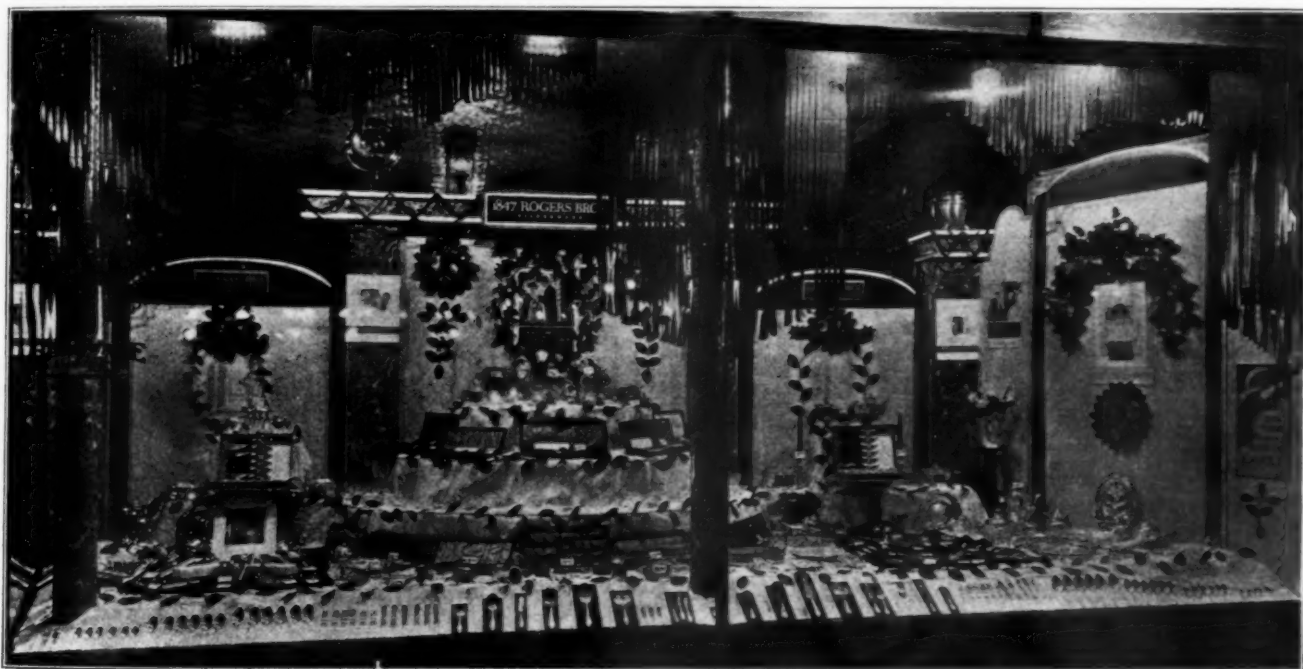
"This display was arranged the week before Christmas which is a very appropriate time of the year to display 'Gifts that Last.' Such a display gives the people a wide

"First, the background was tinted an ivory color decorated with aluminum (a very good imitation for silver). The decorating not only gave it a rich appearance, but showed up very well against the imitation dark marble pillars and beams.

"Secondly, the floor of the window was covered with white cloth so as to give a pure, clean appearance and at the same time be suitable to display hollowware to advantage.

otherwise result in the main display space of the window. The hollowware was arranged on the main space in great variety, except immediately surrounding the center elevation, where a row of plain steel carvers were placed.

"On the first elevation cut glass was displayed. On the second a row of stainless steel carvers. And on the top or uppermost a few of the choicest and most suitable pieces of hollowware.



"Gifts that Last" Window Display that Won Second Prize in AMERICAN ARTISAN Window Display Competition. E. Rahn Arranged the Window for the Bond Hardware Company, Guelph, Ontario, Canada.

range to choose from and at the same time gives them most of the advantages which they would have if they were in the store itself, because every article is priced plainly by means of individual price cards. The pricing of each article has become a very necessary and important piece of work in connection with our windows the value of which we appreciate only through years of experience.

"The decorating of the window was very carefully planned.

"Thirdly, the window and background were trimmed with seasonable crepe paper (red and green) flowers, holly wreaths, cards, etc., all of which added to the Yuletide season appearances and caused greater attraction.

"The goods were then neatly arranged, the flatware along the front of the window as well as on two panels on each side of the elevated center. These panels added greatly to the appearance because they relieved the sameness which would

"Elevated on either side on a pedestal immediately behind the two panels were two chests of silverware and behind them silver service sets on either side of which were casseroles of different styles and sizes. These elevated parts helped greatly to relieve the abruptness the window would have had if it would all have been on the one level.

"The results brought by the display were most encouraging, for it not only sold the goods—which is the best result—but the public made

some very complimentary remarks about the display in comparison to those of other years."

**Indiana Retail Hardware Convention and Exposition Program—January 29 to 31.**

The convention program shown hereinafter is that of the Twenty-fifth Anniversary and Hardware Exposition of the Indiana Retail Hardware Association, to be held at Indianapolis, Indiana, January 29 to 31, 1924. The hardware exposition will be held in the Cadle Tabernacle, and the convention sessions in the Riley Room, Claypool Hotel.

9:00 A. M., Tuesday, January 29.

President George Jones, presiding.  
America, Convention.

Invocation, G. E. Daugherty.

President's message, George A. Jones, Peru.

"Hardware Distribution Problems," Alvin E. Dodd.

"Some Things Hardware Men Should Know About Hardware Tendencies," Paul J. Stokes.

Discussion.

Recommendation of Committee on Revision of Constitution and By-Laws, A. G. Broadie, Chairman.

Committee announcements.

Attendance prize drawings.

9:00 A. M., Wednesday, January 30.

Singing, Convention.

Report of Secretary G. F. Sheely.  
Auditing Committee's Report, H. E. Magee, Chairman.

"Hardware Simplification," Herbert P. Sheets.

Question Box. Through the Question Box the advantages and disadvantages of simplification of hardware lines and its effect on retail hardware business will be fully discussed.

Attendance prize drawings.

9:00 A. M., Thursday, January 31.

Singing, Convention.

Roll call of past officials.

"Stock Turn," Frank Stockdale, Chicago.

Question Box. This session of the Question Box will be devoted exclusively to the discussion of

stock turn and its advantage and benefit to the retail hardware merchant.

Attendance prize drawings.

9:00 A. M., Friday, February 1.

Committee reports—Resolutions, Special, Nominating.

"Building Business," S. R. Miles.

"The Human Element in Business," Howard J. Wisehaupt, Cleveland, Ohio.

New and unfinished business.

Introduction of new officers.

Attendance prize drawings.

Grand prize award.

Adjournment.

## H. P. Sheets Urges Kentucky Hardware Men to Cut Paint Colors to Twenty-four.

**President Lucas Declares Return of Horse to Farm Will Build Up Hardware and Implement Demand.**

**A**N appeal for the horse—a demand that the replacement of the horse on the farm by the gasoline motor be stopped—was made by J. B. Lucas, Franklin, Kentucky, president of the Kentucky Hardware and Implement Association, at the opening meeting of the Twenty-fourth Annual Convention, January 22d, at Jefferson County Armory.

"Farmers in the country spent infinitely more money during the last year for gasoline and oils than for all the farm implements and hardware bought during that period," Mr. Lucas said. He declared that only the return of the horse will bring back a healthy hardware market.

Mayor Hustin Quin welcomed the members to Louisville at the opening meeting.

Invocation was by the Rev. Dr. Charles W. Welch, pastor of the Fourth Avenue Presbyterian Church.

**Machinery Sales Low.**

"Why is it that there were more than 4,000,000 gasoline vehicles made in the United States last year and possibly less than 50,000 horse-drawn vehicles of all kinds?" Mr. Lucas asked. "Statistics show us that farmers spent less than 3½ per cent of their income on farming equipment and machinery during 1923."

Exhibitors at the convention were



J. M. Stone, Secretary-Treasurer Kentucky Hardware and Implement Association.



optimistic over the return of the horse. There were many exhibits of hardware of all kinds as well as buggies and carriages. The horse-drawn plow, harrow and other implements also were plentiful.

#### Fewer Paint Colors.

A resolution favoring the proposed plan of cutting down the number of colors of paint to twenty-four was adopted at the session of the hardware dealers Tuesday.

Herbert P. Sheets, National Secretary of the National Retail Hardware Association, spoke in favor of the movement. He said that having twenty-four colors of paint will provide a quicker turn-over of paint stock than the thirty-two colors now being sold.

## H. S. Earle, Detroit, Sees Large 1924 Demand for Retail Merchant Service.

*Quotes Statistics Before Kentucky Hardware Convention Showing Where 24 Billion Dollars Will Be Spent for Improvements in Next Five Years.*

THE following address by H. S. "By-Gum" Earle, President of the North Wayne Tool Company, Detroit, Michigan, was delivered before the members of the Kentucky Hardware and Implement Association during its Twenty-fourth Annual Convention, Louisville, Kentucky, January 22 to 25:

#### Serve-O-Logical Philosophy, by Horatio Sawyer Earle.

I come, not like the old maid to the mother, to give advice on how to raise children, when she had had no experience in the business, but rather as one who has had a varied experience, and one who, as a boy, had no bright prospects, but only by his perseverance has won success.

Born and reared on a farm composed of stumps, stones and swamps, on top of the Green Mountains of Vermont, I spent the first twenty years of my life, then evolved into the lumber woods; railroad repair train service; saw mill; chair factory; iron foundry; moulder and melter; boss of the foundry; salesman to retail dealers; salesman to wholesale dealers; became a retail dealer, a wholesaler, and finally a manufacturer. My experience has taught me that the scientific principles of farming applied to any necessary and honest business will one day bring success.

#### Defines Advertising.

I was not satisfied with the dictionary's definition of the word *advertising*, so I wrote one myself, which is, "Adver-

tising is the science of shooting a buy-suggestion into the mind of a perhapsable customer." What better way can this be done than to so satisfy every customer to whom one sells an article that from the moment he or she is constantly advertising your store—shooting buy-suggestions into the minds of other people?

You plowed your field when you put in your stock and opened your doors for business; you harrowed that field when you advertised in your local paper that you had done this for the purpose of rendering service in your locality; you sowed the seed in every sale which you made—good seed, not weed seed, if every article you sold was the article you would have purchased for like purpose had the positions of your customer and yourself been reversed.

At the Thursday afternoon session the address by H. S. Earle Serv-O-Logical Philosophy was heard and many favorable comments were made.

The three graces—expense, margin and profit—formed the nucleus around which the discussion centered at the Thursday evening session.

Distribution from the manufacturer, jobber and retailer standpoint was discussed. This subject as usual created a great deal of comment.

In the evening of the Wednesday's session the subject of simplification was again taken up. The problem of manufacturers' publicity campaign was given some time.

At the Thursday afternoon session the address by H. S. Earle Serv-O-Logical Philosophy was heard and many favorable comments were made.

The three graces—expense, margin and profit—formed the nucleus around which the discussion centered at the Thursday evening session.

#### 1924 Dealer Service Demand to Be Large.

But is there going to be a demand for a dealer's service in the future?

The railroad companies of our United States will expend in the next five years eight billion dollars on repairs and improvements. In the next five years the United States government, the different states and counties will expend in building good roads another eight billion dollars.

The cities of over ten thousand inhabitants in the United States will, in the next five years, expend for streets, sewers, parks, water works and other public utilities, another eight billion dollars.

Never in the history of the United States of America were the prospects as bright as they are today.

Several years ago I was crossing the Bay of Fundy from Diby, Nova Scotia,

to St. John, New Brunswick, and while it was a beautiful, sunshiny day, we ran into a Bay of Fundy fog bank. We had pessimists aboard, who were sure we would collide with some other boat and all go to the bottom of the bay; we also had some optimists on the boat, who gathered in groups and sang hymns and prayed. But you could not go through a Bay of Fundy fog bank safely by either the pessimist or optimist doctrines; however, we had a captain on the bridge who had a plan, which was a chart, and we had a pilot in the wheelhouse who had a directing compass, and we proceeded slowly and carefully, according to the plan as directed by the compass, constantly blowing our horn, advertising the fact that we were coming, and we went safely through the fog because of the fact that we had a captain and a helmsman who were actomists, and whose orders every seaman aboard that boat obeyed without question.

#### Results of Tooting the Truth.

The dealer who toots the truth and keeps on will have a safe and prosperous voyage, and if he doesn't toot the truth he will have a collision with a Profit-and-Loss Account, which will cripple his boat if it does not sink it.

To be successful as a dealer, one must be a salesman, and it is not salesmanship to supply a customer with what he wants when he wants it. *That is service.*

Salesmanship consists of an ability to make a customer want that which he doesn't know he wants, and who will be thankful for its being sold to him.

#### Change "Profit" to "Pay for Service."

Of all the words in the dictionary, the word "Profit" has caused the most trouble. It is associated with robbery, overcharge, etc.; but you must have another word or words to take its place, so let us substitute the words "pay for service." So, if you ever sell a farmer a Little Giant scythe, don't you dare to take sixty-seven cents in profit; instead, you take sixty-seven cents "pay for service."

Taxes are going to be some less and we hope that a portion of the government employes will be dropped from the non-productive payrolls and be forced to work for their living.

Prices will remain about where they are as long as taxes remain where they are, for the taxes and the tremendous unnecessary expense that business is subjected to by the rules and regulations of national and state governments are a portion of the manufacturing and distributing cost.

#### What! Eliminate the Jobber?

I sometimes hear that the middle man in business, the jobber, is an extra expense and should be eliminated, and allow the manufacturers to sell their goods direct to the retail trade.

What would that mean? That at least one hundred traveling salesmen would call upon each of you where only one calls now. Further, the wholesale hardware dealers of the United States have an invested capital of approximately \$600,000,000, and they have a borrowing ability of another \$600,000,000, amounting to a total of \$1,200,000,000.

Just suppose for a minute that they should all go out of business, at that same minute the retail hardware businesses and the manufacturing businesses would have to increase their capital, not only a like amount, but at least twice that amount, for retail dealers would have to double or treble their orders, be-



cause of the fact that it would take weeks for them to get their goods; whereas, now it takes but a day or two.

Nearly all of you are members of some noon-day luncheon club. Do this for me and see if it doesn't pay: Insist that your club once in three months have a "Competitor's Day," and on that day every dealer of every kind and every professional man invite his competitor to attend as his guest.

This invitation will create another and you will be invited to attend your competitor's club, and even though your competitor looks like a "nut" to you, when you get acquainted with him at the noon-day luncheon club, you will find this "nut" after being cracked open has mighty good meat inside, and the right way to compete is to strive to serve the public better than your competitor, and that is *Serve-O-Logical Philosophy*.

companies cannot expect direct relief from the present high loss ratio on this class of business until payroll audits have been made on 1924 policies, which cannot be completed before 1925.

#### Recover 17 of 26 Cars Stolen.

Our automobile business has again been highly profitable and with a continuation of our present rate of growth, we should write approximately \$700,000 in automobile premiums during 1924. With the adoption of inspection reports on the moral hazard of our policyholders in 1923, we have been successful in reducing our automobile fire and theft loss ratio to less than 25 per cent. This is a figure which can be equaled by only one or two companies in this business. Out of twenty-six total thefts reported, we have been successful in recovering seventeen. Our 1922 record was twenty-six total thefts and eighteen recovered.

Plate glass insurance has experienced the highest loss ratio in the history of the company. This can be attributed to a slight decrease in rates in the spring of 1923 and several increases in the cost of plate glass during this period. Our loss ratio was 32 per cent, which is 10 per

## Policy Holders of Hardware Dealers' Mutual Fire of Wisconsin, and Mutual Casualty, Meet at Stevens Point, January 16.

**O. P. Schlafer Re-elected President—P. J. Jacobs Retains Secretary-Treasurership of Both Companies.**

**T**HE Annual Policyholders' Meetings of the Hardware Dealers' Mutual Fire Insurance Company and Hardware Mutual Casualty Company were held in the home office at Stevens Point, Wisconsin, Wednesday, January 16.

It was formerly customary to hold these meetings with the regular Wisconsin Hardware Association convention, but changes have made it necessary to hold them in the month of January.

Directors Louis Hirsig, Madison, Wisconsin; Jacob Kornely, Milwaukee, and P. J. Jacobs, Stevens Point, were elected for a term of three years to succeed themselves.

Following the election of the Directors, a meeting of the Board of Directors of each company was held. The personnel of the board is the

same for both institutions. O. P. Schlafer, Appleton, was re-elected President; R. C. Murdock, Beloit, was re-elected Vice-President, and P. J. Jacobs, Stevens Point, Wisconsin, was re-elected Secretary-Treasurer of both companies.

The annual reports indicate that both companies made substantial increases in their volume of business and corresponding increases in assets.

#### Report of President O. P. Schlafer to Hardware Mutual Casualty Company.

In the President's report read to you last year the prediction was made that we would exceed \$800,000 in premium writings for the year 1923. We exceeded this figure by \$19,578.30, which represents an increase of 28 per cent over the previous year, and is distributed as follows:

Workmen's Compensation.....	\$216,822.13
General Liability.....	14,993.75
Automobile .....	493,129.97
Plate Glass .....	94,632.45

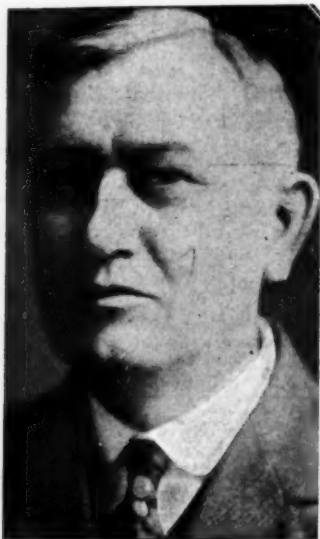
Workmen's compensation increased 17 per cent, general liability 26 per cent, automobile 32 per cent, and plate glass 28 per cent over 1922. This increase is due almost entirely to new business, as rates were practically the same as the previous year. We added 2,183 new policyholders, making our total membership 12,947.

#### Increase in Rates Advocated.

During 1923 practically every state in which we are writing workmen's compensation business increased the benefits to injured workmen, but as yet new rates to take care of these increases have not been promulgated. With the liberal interpretation of the existing laws as made by the various Industrial Commissions and courts, it is absolutely essential that substantial increases in rates be made in all states. With the centralization of rate-making activities in the National Council on Compensation Insurance, which body was organized during 1923, it is evident that the necessary increases will have been released for most states before the close of 1924. However, the



**P. J. Jacobs,  
Re-Elected Secretary-Treasurer.**



**O. P. Schlafer,  
Re-Elected President.**

cent higher than ever before. However, the tendency during the latter part of the year has been toward a reduction in the cost of glass, which should bring our loss ratio in 1924 back to normal.

Last year saw the largest number of claims ever reported in the history of our company. A total of 4,942 was received, which means an average of approximately eighteen for every working day. The total number reported since organization is 13,073. Of this number, only 467 were unsettled on January 1.

Our assets increased 31 per cent and our cash investments now total \$522,114.16. Of this amount, \$430,785.01 is in Liberty Loan bonds.

While at the present time our business is being written in every state of the Union, including Alaska, we have found our greatest increase is being received from the middle western states. Our field organization is being rapidly developed in this territory and from present indications we should have no difficulty

in exceeding \$1,000,000 in premiums for the year 1924.

**Report of President O. P. Schlafer to the Hardware Dealers' Mutual Fire Insurance Company.**

The year 1923 is regarded by nearly all fire insurance companies as one of the most unprofitable ones in their history. The high loss ratio which prevailed in 1922 continued throughout 1923. While our net premium writings increased \$347,230.56, or 23½ per cent, the losses increased proportionately, so that we closed 1923 with a 33 per cent loss ratio, which is practically the same percentage of losses paid as in the previous year. We had hoped that with the revival of business in general a lower loss ratio would result, but the hopes indulged in at the beginning of 1923 have been in vain.

Our net amount at risk has increased approximately thirty million, which is eight million greater than our increase during the year 1922. The assets also show a consistent, steady growth, and on December 31 we had \$1,622,438, which is an increase of \$223,661 over the twelve months period.

**Dividends Increase.**

Dividends to policyholders increase each year with the premium writings, and during the past year we returned \$730,880.10, making a total of \$3,119,412.88 returned to members since organization.

A little over two years ago we extended our operations to the writings of preferred mercantile risks other than retail hardware and implement stores, and our experience in this class has been very satisfactory. The total net premium writings in this class have been \$133,877 and we paid \$33,000 in losses, or a ratio of 24½ per cent to net premiums received. Our tornado business shows the same satisfactory results, the net premiums to date being \$103,130 and \$9,300 paid in losses, or a ratio of 9 per cent.

**Extent of Service.**

During the past year we were licensed to transact business in Maine, Rhode Island and Connecticut. We are now licensed in forty-two states and in four provinces of the Dominion of Canada. No new branch offices have been established, as every effort is being made to increase the efficiency of the branch offices now in operation, thereby rendering better service to our policyholders.

In the face of soaring prices in practically all other lines, we find the fire insurance rates are much lower today than five years ago. Especially is this true right here in our own state. This is one of the reasons why we cannot hope to have the low loss ratio of pre-war years. Continued high loss ratios are to be expected until conditions are better in the hardware and implement business. Should there be a marked business revival during the coming year, we can hope for better results during 1924.

**Combating the Work of Jack Frost.**

Jack Frost is a past master in the art of window designing. The human who approaches his perfection is indeed a whiz-bang and crack decorator. However, Jack Frost mon-

nopolizes the setting to the exclusion of a view of all other objects shown in the window. No one would think of placing a court plaster across the mouth of his salesman.

If you wish to successfully combat so persistent and so successful a painter as Jack Frost, put an electric heat reflector in the center of the window and direct it towards the pane of glass. This will effectually discourage your obnoxious enemy from painting designs that don't mean anything all over your windows. The warm rays from the reflector will effectually dry the moisture and will put J. F. out of business.

**George W. Simmons, St. Louis, to Enter Banking Field in New York, February 1.**

George W. Simmons has resigned as vice-president of the Simmons Hardware Company, St. Louis, Missouri, and of the Winchester-Simmons Company, effective January 31, to become vice-president of the Mechanics & Metals National Bank of New York City, and will assume his new duties on February 1. He will, however, continue as a member of the board of directors of each of these companies.

Mr. Simmons has long been connected with banking interests, and has been identified as director for a number of years with two of the leading banks in St. Louis.

Wallace D. Simmons resigned as president of the Simmons Hardware Company some time ago, but remains a director of the Winchester-Simmons Company, and a trustee of the associated Simmons hardware companies. Edward H. Simmons ceased active connection with the company on January 1 last, but continues as vice-president, director and member of the executive committee of the Simmons Hardware Company of Missouri, and a director of the Winchester-Simmons Company.

The Simmons Hardware Company and all of its subsidiaries was merged with the Winchester Company, New Haven, Connecticut, in June, 1922.

**E. H. Wolff, Former Illinois Zinc Manager, to Enter Retail Hardware at Dallas.**

E. H. Wolff, La Salle, Illinois, former general manager of the Illinois Zinc Company, will leave in the near future for Dallas, Texas, where he has purchased a controlling interest in an established wholesale and retail hardware business. This will not be the first experience Mr. Wolff has had in the hardware game, as he was connected with a firm of like character in Pennsylvania some years ago.

**Michigan Retail Hardware Association Now in New Office After Fire.**

A fire occurring recently in the office of the Michigan Retail Hardware Association, Marine City, Michigan, destroyed all the records and files.

Secretary Arthur J. Scott says that the fire will not interfere with the convention arrangements in any way, as he is already located in a new office at 318 South Water Street, Marine City, Michigan.

**Wage Dollar Buys 25 Per Cent More Than in 1913.**

We have heard much of late years about the cost of living. It is now 64 per cent above that of 1913. Wages have increased 80 per cent above that of the average wage at that time.

This means that the average spending power per capita is very much higher than it was. The main thing to consider is, that there has been a larger increase in the amount of the spending power of the nation than there has been in the cost of goods he bought. There is a world of significance to the live hardware merchant in these facts. It will enable him to more successfully combat any arguments about the "high cost," relatively, of merchandise, to persuade the customer to buy more things, etc.

Send us copies of your advertisements.



## *Iowa Retail Hardware Association Convention to Be Lively Affair.*

*Hotel Savery, Des Moines, to Be the Scene of Action, February 12 to 15—Exhibits in Coliseum.*

**"E**VERY hardware dealer in Iowa owes it to himself, his community and his craft to be present at the Iowa Retail Hardware Association's Twenty-sixth Annual Convention in Des Moines the week of February 12. Every indication is that our attendance will be larger than ever, and why? It is because the fight of the last few years has made us realize more than ever the value of coöperation with our fellow hardware dealers," says President C. A. Knutson.

"Manufacturers and jobbers will appear before us and give us the benefit of their experience and their views of the business outlook for 1924. The greater part of our program, however, will be the discussion of questions from the Question Box, so send in your questions to Secretary Sale or bring them with you and come prepared to take part in these discussions.

"Are you troubled about your book accounts—margin—overhead—unfair competition or anything else—come to this convention and let us thrash it out. Get the benefit of the other fellow's experience and give him the benefit of ours. The best way to help ourselves is by helping others. Bear in mind the motto:

"But when the one Great Scorer comes to write against your name,

He writes not that you won or lost, but how you played the game."

"Bring the ladies. The Ladies' Auxiliary have planned a very interesting program."

The opening of the convention will take place Tuesday morning, February 12, in the Venetian Room of the Hotel Savery.

An address on "Salesmanship" will be delivered by George M. Gray, Vice-President N. R. H. A., Coshocton, Ohio, following the

opening sessions of the convention. This address will be followed by an open forum discussion, and the appointment of special committees—Resolutions, Auditing and Nominating.

The Wednesday morning session will be opened with an address by Alvin E. Dodd, Manager Domestic Distribution Department, U. S. Chamber of Commerce.

G. A. Garver, Strasburg, Ohio, will give an address on the "Building of a Million Dollar Business in a Town of 1000!" This address will be followed by the open forum discussion.

The afternoon will be taken up in viewing the exhibits at the Coliseum.

A Symposium on Distribution is

## *Wisconsin Retail Hardware Dealers to Meet in Auditorium, Milwaukee, February 6 to 8.*

*Bring Your Buyers' Card with You—Cash Prizes as High as \$25 Offered for Largest Volume of Merchandise Bought.*

**"Y**OU will find it easier to make money in 1924 after hearing the wonderful talks given by many of the country's greatest merchandisers," says announcement of Wisconsin Retail Hardware Association.

Reserve February 6, 7, 8, 1924, for this great educational event. Come to Milwaukee prepared to be present at every session. Buyers' Sessions, when dealers spend the time with the exhibitors, on Wednesday forenoon and Thursday afternoon, provide ample time for buying.

Read the following exceptional program of the Twenty-eighth Annual Convention and Hardware Exhibit, Auditorium, Milwaukee, Wisconsin:

**Wednesday, February 6, 1924.**

9:00 a. m.—Auditorium, Main

scheduled for the program of Thursday morning, February 14, in the Venetian Room. At this time F. H. Luthe, Des Moines, a wholesaler, and F. P. Bolinger, Afton, a retailer, will speak.

"Rural Community Leadership Vital to Business" will be the subject of an address by Alexander Karr, American Community Association, Chicago.

The sessions on Friday, February 15, will take place in the Florentine Room of the Hotel Savery.

There will be a Round Table Conference on the Insurance Question Box at this time.

Our New Store Service Department will be discussed by A. C. C. Ryczek, Manager.

The Board of Directors' organization meeting will be held at 2 p. m. Friday, February 15.

A well rounded program for the ladies has been arranged by the Ladies' Auxiliary for each day of the convention.

Arena, Juneau and Kilbourn Halls. Opening of Hardware Exposition.

9:10 a. m.—Buyers' Session.

Dealers will spend the forenoon with Exhibitors.

Have every order recorded on Order Register.

Only names of legitimate exhibitors will be recognized in awarding of prizes.

1:45 p. m.—Engelmann Hall.

Community Singing—"All Together Boys."

Business Institute—"Profit Making Plans," Frank Stockdale, Chicago, Illinois.

President's Message.

Announcements.

Community Singing.

"Building a Million Dollar Business in a Town of 1,000," G. A. Garver, Strasburg, Ohio.

Adjournment.



Get your tickets for the banquet at Secretary's Office.

6:00 p. m.—Exposition closes for the day.

**Thursday, February 7, 1924.**

9:00 a. m.—Auditorium, Main Arena, Juneau and Kilbourn Halls. Exhibitors ready to take orders.

9:45 a. m.—Engelmann Hall.

Community Singing—Everybody sings.

Business Institute—"Stockturn," Frank Stockdale, Chicago, Illinois.

Community Singing.

Announcements.

Dealers' Forum (10 minutes).

Matters of interest to the membership may be brought before the Assembly at this time.

"Margin, Expense, Profit," W. H. Farley, Dayton, Ohio.

Adjournment.

1:30 p. m.—Buyers' Session.

Dealers will spend afternoon with Exhibitors.

6:30 p. m.—Exposition closes for the day.

Fern Room, Hotel Pfister—Banquet Entertainment for Hardware men, wives, daughters and clerks.

Get your tickets at the Secretary's office before 3:00 p. m.

**Friday, February 8, 1924.**

9:00 a. m.—Auditorium, Main Arena Juneau and Kilbourn Halls. Last morning of Hardware Show.

Exhibits will remain in place until 3:00 p. m.

9:45 a. m.—Engelmann Hall.

Community Singing.

Business Institute—"How Advertising Lessens Sales Resistance," James W. Fisk, Milwaukee.

Community Singing.

Announcements.

Dealers' Forum (10 minutes).

Matters of interest to the membership may be brought before the Assembly at this time.

"Taxation in Wisconsin," F. H. Clausen, President Van Brunt Manufacturing Company, Horicon, and director of Wisconsin Manufacturers' Association.

**Friday Afternoon.**

1:45 p. m.—Engelmann Hall.

Community Singing—Lots of Fun.

Business Institute—"Finding the

Weak Spots in Your Business," James W. Fisk, Milwaukee.

Announcements.

Reports of all Committees.

"Salesmanship That Is Needed,"

J. S. Knox, Cleveland, Ohio.

Adjournment.

Meeting of Executive Committee and Officers.

By placing your orders at the Convention you are encouraging a larger number of better exhibits which in themselves are highly educational. Make a list of everything you possibly need before leaving your store and do your buying from samples in the Exhibit halls. Keep a record of every order on the cards provided for that purpose. Follow instructions on these cards and turn them in promptly on the date suggested.

### *Here Are Two Suggestions for Winter Advertising.*

You can obtain a snowy window effect by cutting letters from sheet cotton and attaching them on the inside of your window next to the glass. The letters closely resemble snow and frost effect.

If your store is located in a cold winter region where the snowfall is heavy, try out the following: The first heavy snowfall employ three or four boys to make two large snow men—say about 8 feet tall. Stand them on a vacant spot or lot where they can be seen by many people. Letter a large sign advertising your store, and mount on a board 12 to 30 inches wide and about 8 feet long. Build the arms of the snow figures so you can fasten a sign to them.

### *Building Construction in 1923 Cost \$5,922,900,000.*

The Copper and Brass Research Association's annual survey of building construction places the total expenditure during 1923 at \$5,922,900,000, the largest single year in the history of the building industry, and bringing the total volume of construction for the past two years to the astounding total of \$11,000,000,000.

During 1923 the expenditure for residential buildings, including dwellings, apartments and hotels,

amounted to \$2,302,240,000, so that nearly 40 per cent of the total expenditure went to relieve the acute housing shortage which still existed at the beginning of the year.

As a result of the past two years of record-breaking construction, the shortage in all classes of building brought about by the war has been steadily reduced. July 1, 1921, saw an estimated building shortage of \$8,084,985,000, and construction during the remainder of that year reduced this figure to \$6,363,835,000 on January 1, 1922. Construction in 1922 reached the total of \$4,910,000,000, of which \$3,125,000,000 represented the normal yearly demand for new construction, so that the shortage was relieved during 1922 by \$1,785,000,000.

Total construction of \$5,922,900,000 during 1923 has contributed further to relieve this building shortage by a total of \$2,617,900,000, leaving a shortage on January 1, 1924, of \$1,960,935,000.

The total expenditure for building construction during 1924 is estimated by the Copper and Brass Research Association at \$4,835,935,000, of which amount \$3,125,000,000 represents the expenditure necessary for normal building requirements.

Construction in 1923 was divided among the different classes of building as follows:

Classification.	Total.	Per Cent.
Apartments .....	\$ 947,670,000	16.00
Churches .....	400,980,000	6.77
Dwellings .....	710,750,000	12.00
Hospitals .....	450,015,000	7.60
Hotels .....	643,820,000	10.87
Industrial bldgs..	748,065,000	12.63
Office buildings..	607,690,000	10.26
Public buildings..	248,770,000	4.20
Schools .....	1,165,140,000	19.67
Total .....	\$5,922,900,000	100.00

### *J. C. Coit Resigns from Lee-Coit-Andreesen, Omaha.*

J. Clark Coit has resigned the presidency of the Lee-Coit-Andreesen Hardware Company, Omaha. Luther Kountz, president of one of the leading Omaha banks, and a relative of the Andreesen family, succeeds Mr. Coit as president of the hardware company.

### Cost Advertising Reduces to the Consumer.

It has been shown how advertising makes possible better values for less money in the retail and wholesale business. This is even more true in manufacturing. Common sense teaches people that to make a thousand wrenches is cheaper per wrench than to make just ten. Advertising is justifiable from the manufacturer's standpoint, because it increases production.

No manufacturer could get rich if he depended on only the number of customers he would get in his own immediate community. His answer to successful production is increased territory. He is constantly hunting new customers. The modern method of hunting more customers is to present the product for sale before a larger audience through good advertising.

Only a certain percentage of the business will go to any one manufacturer. The principle of advertising is to increase the volume of sales. Tell more people that you are in business, and more people will buy from you.

An example of the percentage business is: If one hundred people know that you are in business, then you may expect to get the trade of, say, ten of them. If one thousand people know that you are in business, then expect the trade of one hundred. Advertising is the process by which you present your proposition. Increased production reduces the cost to the manufacturer, who ultimately reduces the cost to the consumer.—Arthur Hallam.

### Coming Conventions

Sheet Metal Contractors' Association of Indiana, Hotel Severin, Indianapolis, January 29 and 30. Leslie W. Beach, Richmond, Indiana, is Secretary.

Indiana Retail Hardware Association, Inc., Convention and Exhibition, Cadle Tabernacle, Indianapolis, January 29, 30, 31, February 1, 1924. G. F. Sheely, Secretary, Argos.

Nebraska Retail Hardware Association, Lincoln, Nebraska, February 5 to 8, 1924. George H. Dietz, Lincoln Nebraska, Secretary-Treasurer.

Wisconsin Retail Hardware Association Convention and Exhibition, Milwaukee Auditorium, February 6, 7, 8, 1924.

George W. Kornely, Manager of Exhibits, 1476 Green Bay Avenue, Milwaukee. P. J. Jacobs, Secretary-Treasurer, Stevens Point.

Michigan Retail Hardware Convention and Exhibition, Grand Rapids, February 12, 13, 14, 1924. Karl S. Judson, Exhibit Manager, 248 Morris Avenue, Grand Rapids. A. J. Scott, Secretary, Marine City, Michigan.

Iowa Retail Hardware Association, Des Moines, Iowa, February 12, 13, 14 and 15, 1924. A. R. Sale, Secretary-Treasurer, Mason City, Iowa.

The Pennsylvania and Atlantic Seaboard Hardware Association, Incorporated, Convention and Exhibition at the Philadelphia Commercial Museum, Philadelphia, Pennsylvania, February 12, 13, 14 and 15, 1924. Sharon E. Jones, Secretary-Treasurer, Wesley Building, Philadelphia.

Illinois Retail Hardware Association, Hotel Sherman, Chicago, Illinois, February 19, 20 and 21, 1924. Leon D. Nish, Secretary-Treasurer, Elgin, Illinois.

Ohio Hardware Association, Convention and Exhibition, Cincinnati, Ohio, February 19, 20, 21 and 22, 1924. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

New York Retail Hardware Association Convention and Exhibition, February 19, 20, 21, 22, 1924. Headquarters, McAlpin Hotel, and exhibition at Seventy-first Regiment Armory. John B. Foley, Secretary, 412-413 City Bank Building, Syracuse, New York.

New England Hardware Dealers' Association Convention and Exhibition, Mechanics' Building, Boston, February 20, 21, 22, 1924. George A. Field, Secretary, 10 High Street, Boston, Massachusetts.

North Dakota Retail Hardware Association Convention and Exhibition, Municipal Auditorium, Fargo, February 20, 21, 22, 1924. C. N. Barnes, Secretary, Grand Forks.

Michigan Sheet Metal and Roofing Contractors' Association, February 25 to 28, 1924, Hotel Kerns, Lansing. F. E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids, Michigan.

Missouri Retail Hardware Association Convention and Exhibition, Marquette Hotel, St. Louis, February 26, 27 and 28, 1924. F. X. Becherer, Secretary, 5106 North Broadway, St. Louis.

Minnesota Retail Hardware Association Convention and Exposition, St. Paul Auditorium, February 26, 27, 28, 29, 1924. C. H. Casey, Secretary, Jordan, Minnesota.

California Retail Hardware Implement Association Convention and Exhibition, Civic Auditorium, San Francisco, March 18, 19, 20, 21, 22, 1924. LeRoy Smith, Treasurer, 112 Market Street, San Francisco.

Southeastern Retail Hardware and Implement Association, composed of Alabama, Florida, Georgia and Tennessee. Convention and Exhibition, Atlanta, Georgia, May 27, 28, 29, 1924. Walter Harlan, Secretary, 701 Grand Theater Building, Atlanta.

Hardware Association of the Carolinas Convention, Wrightsville Beach, North Carolina, June 17, 18, 19, 1924. T. W. Dixon, Secretary-Treasurer, 717-718 Commercial Bank Building, Charlotte, North Carolina.

South Dakota Retail Hardware Association and Exposition, Coliseum Building, Sioux Falls, March 4, 5, 6, 7, 1924. C. H. Casey, Secretary, Jordan, Minnesota.

Eleventh Convention Illinois Sheet Metal Contractors' Association, Peoria, Illinois, April 2 and 3, 1924. Secretary, Fred C. Gross, 219 South Fifth Street, Quincy, Illinois.

Spring Convention of American Hardware Manufacturers' Association, Roosevelt Hotel, New Orleans, Louisiana, April 8, 9, 10 and 11, 1924. Frederick D. Mitchell, Secretary-Treasurer, 1819 Broadway, New York City.

National Warm Air Heating and Ventilating Association Convention, Hotel Winton, Cleveland, Ohio, April 16 and 17, 1924. Allen W. Williams, 52 West Gay Street, Columbus, Ohio, Secretary.

### Retail Hardware Doings

#### Arkansas.

E. E. Kyler, Stuttgart, has purchased the interest of his former partner, John W. Hastings, in the firm of Kyler-Hastings Hardware Company and is now the sole owner of the firm. He will conduct the business under the name of the Kyler Hardware Company.

#### California.

The Porterville Hardware Company of Porterville is being transferred from Bert Sutherland, the founder and owner for fifteen years, to Fred Belton, A. F. Hammond and L. G. Nieson.

#### Illinois.

J. W. Murphy, Dallas City, has sold his hardware store to Logan Brothers. Mr. Murphy will remain in the store for a time, assisting the boys in becoming familiar with the trade.

Oscar A. and Charles K. Ross, Newton, have closed a deal whereby they will transfer their hardware store at the southeast corner of the square to R. L. Worcester.

A new hardware store has been opened at 1822 West 103rd Street, Chicago, until recently occupied by the Scientific Heating and Hardware Company. The new company is to be known as the Triangle Hardware Company and it will deal in Winchester products.

Charles F. Auer, Arcola, disposed of the balance of his hardware stock at public auction.

#### Iowa.

Kirkpatrick and Farrell, of Burlington, who have been in the hardware and implement business for a number of years have dissolved partnership—Mr. Kirkpatrick taking the hardware stock and Farrell the implement and furnace part of the business. Mr. Farrell expects to add an electrical and plumbing stock.

Samuel Wolfinbarger, Neosho, recently purchased a block of stock in the Briggs Hardware Company and was elected president of the company at a meeting of the directors.

#### Missouri.

C. K. Connell of Gellatin has sold an interest in his hardware store to Mr. S. E. Carpenter of Plattsburg, Missouri, who has moved to Gellatin.

#### Texas.

J. W. Keenan and Son have moved from 414 Twenty-second Street, Galveston, to 421 Twenty-third Street.

#### Washington.

Burr Doty, Inc., Mount Vernon, has purchased the stock and fixtures, including the plumbing and tin shop of the Mount Vernon Hardware Company.



## Sales Force of Abram Cox Stove Company Confer at Philadelphia January 3, 4 and 5.

*Over Fifty Members of Sales Personnel Meet Manufacturing Department Heads at Sylvania Hotel Banquet.*

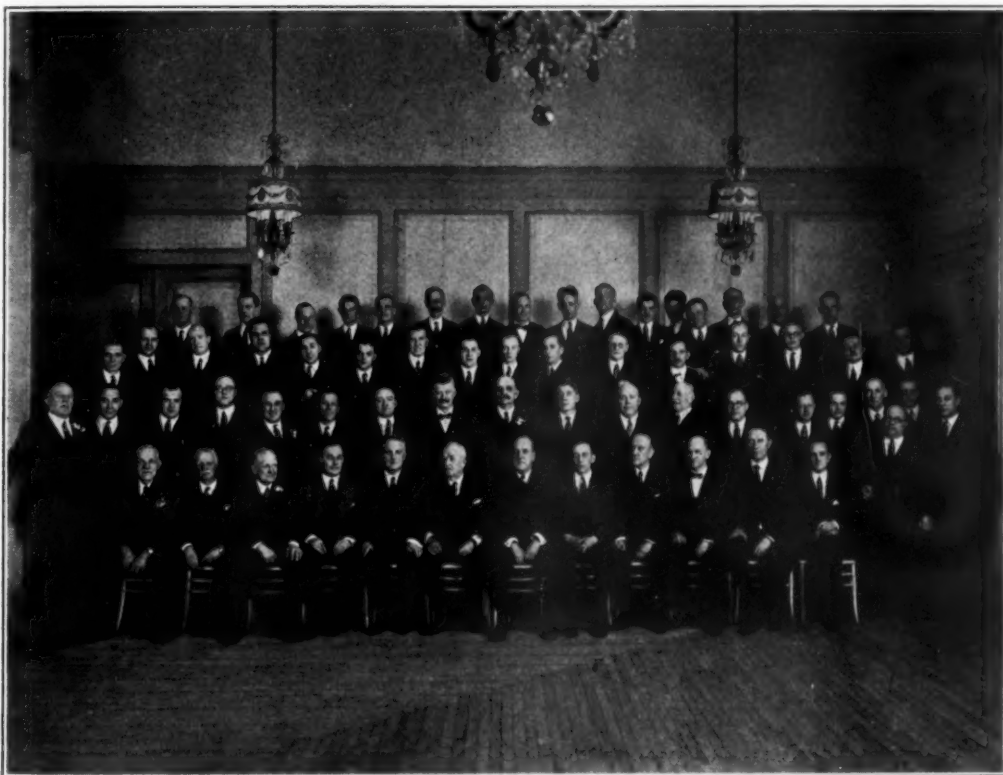
COMPLETING a year of the largest sales volume in the 77 years' history of the Company, the entire sales personnel of the Abram Cox Stove Company, numbering over fifty, met for conference at the Company's main office in Philadelphia, January 3, 4 and 5.

Short talks were also made by George G. Fischer, Manager of the Chicago Branch; Lilburn H. Steel, Manager of the New York Branch; S. H. Carnahan, William Affleck, A. B. Clemo and E. D. Thayer, departmental heads. These talks were enjoyed by all those present.

Committee from a large number of national trade associations urge the abolition of this surtax. A typical argument in support of this measure is as follows:

"The surtax on Pullman seats and sleeping berths is essentially a war tax which President Coolidge in his recent annual message declared should not be retained in time of peace.

"There is certainly no justification for the further retention of this tax. The railroads do not get it and the



Sales Force of Abram Cox Stove Company, Numbering Over Fifty, As It Met in the Company's Offices, Philadelphia, for Conference, January 3, 4 and 5.

E. F. Glore, Treasurer and General Sales Manager, led the discussions at the daily meetings.

On the evening of January 4 the sales division met with the heads of the various manufacturing departments around the banquet table in the Blue Room of the Sylvania Hotel.

The principal speakers at the dinner were A. C. Mott, President; A. C. Mott, Jr., Vice-President; E. F. Glore, General Sales Manager; John W. Jones, Assistant General Sales Manager; Edward Nigg, General Superintendent.

### *What Holds Back Repeal of Surtax and Pullman Fares?*

A most vigorously waged campaign now on foot has been launched by the National Council of the Association of Traveling Men, who are demanding the repeal of the surtax of 50 per cent on Pullman seats and sleeping berths. Already half a dozen Senators and Representatives have introduced bills lifting this tax, which is said to produce approximately \$34,000,000 per annum.

Resolutions and memorials received by the Ways and Means

Federal treasury does not need it.

"This burdensome surtax is paid by every enterprising concern in the country that puts a traveling man on the road, and it is a serious obstacle in the way of stimulating the growth of our industries.

"It therefore seems the height of folly to continue to maintain a tax which acts as a serious obstacle to the extension of business. Congress can do no wiser nor more patriotic thing in connection with the prospective revenue reducing legislation than to repeal the surtax on Pullman seats and sleeping berths."



# Business Men Steadily Growing in Favor of Mellon Tax Reduction Plan.

*Credit Abundance Pronounced—Affairs Abroad Have Not Disturbed Immediate Domestic Outlook.*

**P**OLITICS is being cast to the winds by business men and others in many states in the steadily growing sentiment in favor of the Mellon plan of tax reduction, it was reported by delegations coming to Washington to submit their arguments at the recent public hearings of the house ways and means committee which is wrestling with the proposed legislation. This is as it should be. Delegates of the American Bankers' League reported a rising tide of Democratic as well as Republican sentiment among business men and bankers in at least twenty-six states. At an informal meeting of these delegates prior to the hearing before the ways and means committee, the Mellon sentiment broke out spontaneously. One of the delegates from the West said: "The psychological effect of tax reduction will carry on down the line, through the government, state, county and municipalities. I don't care whether Mellon is a Democrat or a Republican."

Affairs abroad have not disturbed the immediate domestic outlook. Dominating developments here are the extraordinary easing of money, the expansion of the steel trade and steady improvement in a number of other important lines.

Credit abundance is pronounced. The cash ratio of the federal reserve system has gained 7 points since the first of the year. In the same period in 1922 it gained 4 points. The reduction of rediscounts has been double that of January, 1922. Federal reserve note circulation is the lowest since 1918.

Freight traffic has shown rather sharp decline in recent weeks. This is largely due to the drop in coal shipments. Coal markets are dull and output is rising. Stocks are large, however. This fact may have some weight in averting a strike

April 1. Operators and mine unions meet February 11.

## **Copper.**

In the copper market outside of New York, while there was considerably more demand, very little business was transacted, with sellers bidding about five points under asking prices, while the latter were five to ten points higher.

Electrolytic was held at 12.55 cents f. o. b. refinery for prompt, January and February shipment, but the demand was mainly for February-March or March-April.

For March shipment there were few sellers under 12.60 cents f. o. b. refinery. Buyers bidding 12.62½ cents refinery for second quarter and 12.75 cents for third quarter, with few sellers ten points higher.

Lake copper was held at 13 cents delivered, but there was very little demand.

Casting copper was stronger in sympathy with Electrolytic, with few sellers under 12.50 cents f. o. b. refinery. It is notable, however, that there is less foreign demand for American copper and brass scrap.

## **Lead.**

As high as 8.30 cents, East St. Louis, was asked by some holders in the Middle West for soft Missouri. Some producers are able to offer limited lots to their trade at a shade less, but the amount is not large enough to enable them to exercise the curb on the market which they would desire.

February supplies in some directions are hardly up to expectations, and producers' reserve for that month is not large, so that February also is commanding a premium over the American Smelting & Refining Company's contract basing price.

## **Tin.**

The developments in the market should furnish a warning to con-

sumers that it is inadvisable to run their requirements too close, especially in mid-winter, when on account of the stormy weather steamers are repeatedly delayed for a week or more.

First half February delivery was offered for sale January 23 at 48.75 cents, and on the more distant positions business has been done from 48.37½ cents up to 48.62½ cents. The lower prices on the futures were done this morning, when exchange was around \$4.21 for prompt cables. This afternoon sterling has improved to \$4.23.

## **Zinc.**

Zinc has been more active in the past week, especially for metal going to galvanizers.

Prices have increased from 6.35 cents to 6.45 cents and 6.50 cents, East St. Louis, for prompt shipment, with futures commanding 2½ points more for each month.

Smelters are not pushing business at present levels, as they assert that they are losing money on account of the relatively high ore market, the latter having kept pace lately with the increase in slab prices.

## **Solder.**

Chicago warehouse prices on solder are as follows: Warranted, 50-50, \$31.75; Commercial, 45-55, \$31.00, and Plumbers', \$29.75, all per 100 pounds.

## **Wire and Nails.**

Day-to-day business in wire products is improving each week. More single carload orders are coming from jobbers, some for straight carloads and others for mixed carloads. Now that inventories are over, the way is open for placing considerable business of this sort and manufacturers are greatly encouraged over the way it is developing. Plain wire continues firm at 2.75 cents base

Pittsburgh, and wire nails at 3.00 cents base Pittsburgh. Demand for cement-coated nails only is fair, manufacturers noting a falling off since considerable use is made of cardboard boxes by packers who formerly used wooden boxes fastened with cement coated nails.

#### **Bolts and Nuts.**

Demand for bolts and nuts at Chicago continues at the high rate that has prevailed the past few weeks. One or two plants still could take on more business, but most makers are satisfied. In the past week buying by implement makers has decreased slightly. This has been more than offset by the increased buying by automotive interests. The Ford Motor Company has placed its requirements for February. Prices are holding firm on all classifications on the basis of 60 and 10 off.

#### **Sheets.**

While sheet mill operations are not increased, they are being maintained at an average rate around 70 per cent.

These schedules are sustained by day to day orders from customers who have not placed contracts for the quarter's requirements, but who are buying against contracts to be placed later. This is particularly true of full-finished automobile sheets. This method is fairly satisfactory to the sheet manufacturers, being considered superior to the placing of large contracts with subsequent specifications.

Three or four makers are selling at \$2 below the market on blue annealed, black and galvanized sheets.

One or two who maintained the full market prices during December have slipped back to the 2.90 cent, 3.75 cent and 4.90 cent, Pittsburgh, levels named by manufacturers the latter part of last year on blue annealed, black and galvanized, respectively. Full-finished sheets, however, continue firm at 5.35 cents.

#### **Tin Plate.**

Rarely has the tin plate industry had as high an operating rate as it has at present, and still more rarely

has it approached a full operating rate in January. At this time a year ago the independents were running approximately the same as at present, but the leading interests had a considerably lighter percentage operation.

The American Sheet & Tin Plate Company has lately had several days with a 97 per cent operation, which means that it had only eight mills idle of its total of 264. Its average last week was 96.6 per cent.

Production of tin and terne plate is now running at about 850,000 base boxes a week, or at the rate of about 44,000,000 boxes a year. Our estimate for last year was 38,000,000 boxes, making a new record.

There has been no additional selling of any importance and the market is quiet now. The \$5.50 price is very firm.

#### **Old Metals.**

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$18.00 to \$19.00; old iron axles, \$26.00 to \$26.50; steel springs, \$19.50 to \$20.00; No. 1 wrought iron, \$15.50 to \$16.00; No. 1 cast, \$18.50 to \$19.00, all per net tons. Prices for non-ferrous metals are quoted as follows; per pounds: Light copper, 9½ cents; light brass, 6 cents; lead, 4½ cents; zinc, 4 cents, and cast aluminum, 16 cents.

## **Pig Iron Operations Now at 75 Per Cent; Incoming Business Exceeds Shipments.**

*Chicago Market Up to \$24—Middle West Develops Buying Movement for Second Quarter.*

THE steel industry is getting back into its stride. New business again is exceeding shipments despite the fact that production has been expanded. Operations for the industry as a whole have been pushed up to 80 per cent of capacity this week, with the Steel corporation doing around 83 per cent.

Perhaps the most cheerful feature is a renewal of generous buying by agricultural implement manufacturers. The farm machinery industry has been one of the last to recover from the 1920 collapse. Therefore, the present marked improvement in this line of business also denotes the better status of the farmer and suggests better things ahead for all lines of business. At the same time, large buying by the automobile plants and the railroads is helping the steel companies:

"The farm implement demand is on a scale not equaled in many months," the *Iron Age* says. "At Chicago the week's sales of steel bar tonnage were the largest since last May. Leaders of the steel industry now find sign posts pointing to large scale operations well into the second

quarter. The Steel corporation's view of the scale of demand in the spring months is seen in its policy of accumulating good sized stocks of pig iron and semi-finished steel."

The pig iron market reflects more confidence on the part of buyers. At Chicago contracts now are being placed for second quarter at some advance in price. Cleveland furnaces have advanced 50 cents to \$24 and have sold some tonnages at that figure. Southern iron is higher and is definitely at a minimum of \$22 with some makers asking \$23. The recent purchase of 60,000 tons of southern iron by the largest cast iron pipe maker was made from the Tennessee Coal, Iron & Railroad Company. Shipments by merchant furnaces are on the rise and with some producers are running 25 per cent above production.

Effects of the railroad strike are being felt by the British iron and steel industry. A number of furnaces are banked and exporting is being interfered with. French mills have taken 12,000 tons of rail for Brazil and Belgian makers 6,000 tons for Chile.



# Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

## METALS

### FIG IRON.

Chicago Foundry..	24 00 to 24 50
Southern Fdy. No.	2
2 .....	28 01 to 29 01
Lake Sup. Char-	coal .....
Malleable .....	24 00 to 24 50

### FIRST QUALITY BRIGHT TIN PLATES.

	Per Box
IC 14x20 112 sheets	\$12 45
IX 14x20 .....	14 05
IXX 14x20 56 sheets	17 57
IXXX 14x20 .....	18 12
IXXXX 14x20 .....	18 65
IC 20x28 112 sheets	27 50
IX 20x28 .....	29 85
IXX 20x28 56 sheets	16 15
IXXX 20x28 .....	17 20
IXXXX 20x28 .....	18 25

### TERNE PLATES.

	Per Box
IC 20x28, 40-lb. 112 sheets	\$25 60
IX 20x28, 40-lb. "	28 50
IX 20x28, 30-lb. "	21 80
IX 20x28, 30-lb. "	24 70
IX 20x28, 25-lb. "	20 80
IX 20x28, 25-lb. "	23 70
IC 20x28, 20-lb. "	18 30
IV 20x28, 20-lb. "	21 15
IC 20x28, 15-lb. "	17 05
IC 20x28, 12-lb. "	15 75
IC 20x28, 8-lb. "	14 05

### COKE PLATES.

Cokes, 80 lbs., base, 20x28.	\$13 85
Cokes, 90 lbs., base, 20x28.	14 10
Cokes, 100 lbs., base, 20x28.	14 45
Cokes, 107 lbs., base, IC	20x28 .....
Cokes, 136 lbs., base, IX	20x28 .....
Cokes, 155 lbs., base, 56	sheets .....
Cokes, 175 lbs., base, 56	sheets .....
Cokes, 195 lbs., base, 56	sheets .....

### BLUE ANNEALED SHEETS.

Base .....	per 100 lbs. \$3 50
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### ONE PASS COLD ROLLED BLACK.

No. 18-20 .....	per 100 lbs. \$4 50
No. 22-24 .....	per 100 lbs. 4 55
No. 26 .....	per 100 lbs. 4 60
No. 27 .....	per 100 lbs. 4 65
No. 28 .....	per 100 lbs. 4 70
No. 29 .....	per 100 lbs. 4 75

### GALVANIZED.

No. 16 .....	per 100 lbs. \$5 10
No. 18-20 .....	per 100 lbs. 5 25
No. 22-24 .....	per 100 lbs. 5 40
No. 26 .....	per 100 lbs. 5 55
No. 27 .....	per 100 lbs. 5 70
No. 28 .....	per 100 lbs. 5 85
No. 30 .....	per 100 lbs. 6 35

### BAR SOLDER.

Warranted.	50-55 .....
Commercial.	45-55 .....
Plumbers .....	per 100 lbs. 29 75

### ZINC.

In Slabs .....	6 75
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### SHEET ZINC.

Cask lots, stock, 100 lbs.	11 00
Less than cask lots, 100 lbs.	11 50

### BRASS.

Sheets, Chicago base .....	19 1/4 c
Mill Base .....	17 1/4 c
Tubing, brazed, base .....	24 1/4 c
Wire, base .....	17 1/4 c

### COPPER.

Sheets, Chicago base .....	20 1/4 c
Mill base .....	19 1/4 c
Tubing, seamless, base .....	23 c
Wire, No. 9 & 10 B. & S. Ga.	16 1/4 c
Wire, No. 11, B. & S. Ga.	16 1/4 c

### LEAD.

American Pig .....	\$8 50
Bar .....	9 50

Sheet.	Full Coils .....
Cut Coils .....	per 100 lbs. 10 75
	per 100 lbs. 11 75

### TIN.

Pig Tin .....	per 100 lbs. 55 00
Bar Tin .....	per 100 lbs. 56 1/4

## HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

### ADZES.

Coopers'.	
Barton's .....	Net
White's .....	Net

### AMMUNITION.

Shells, Loaded, Peters.	
Loaded with Black Powder 18%	
Loaded with Smokeless Powder .....	18%

Winchester.	
Smokeless Repeater	Grade .....
Smokeless Leader	Grade .....
Black Powder .....	20 & 4%

U. M. C.	
Nitro Club .....	20 & 4%
Arrow .....	20 & 4%
New Club .....	20 & 4%

Gun Wads—per 1000.	
Winchester 7-8 gauge 10&7 1/2%	
" 9-10 gauge 10&7 1/2%	
" 11-28 gauge 10&7 1/2%	

### ASBESTOS.

Paper up to 1/16 .....	.6c per lb.
Rollboard .....	.6 1/4 c per lb.
Millboard 3/32 to 1/2 .....	.6c per lb.
Corrugated Paper (250 sq. ft. to roll) .....	\$6.00 per roll

### AUGERS.

Boring Machine .....	40&10%
Carpenter's Nut .....	50%
Hollow.	
Stearns, No. 4, doz. ....	\$11 50
Post Hole.	
Iwan's Post Hole and Well	35%
Vaughan's, 4 to 9 in. ....	\$15 60

### AXES.

First Quality, Single Bitted (unhandled), 3 to 4 lb., per doz. ....	\$14 00
Good Quality, Single Bitted, same weight, per doz. ....	13 00

### BAR, CROW.

Steel, 4 ft., 10 lb. ....	\$ 80
Steel, 5 ft., 18 lb. ....	1 40
Pinch Bars, 5 1/2 ft., 24 lb. ....	1 60

### BAR, WRECKING.

V. & B. No. 12 .....	\$0 34
V. & B. No. 24 .....	0 43
V. & B. No. 324 .....	0 67
V. & B. No. 30 .....	0 45
V. & B. No. 330 .....	0 63

### HITS.

All Vaughan and Bushnell.	
Screw Driver, No. 30, each. \$	27
Screw Driver, No. 1, each.	16
Reamer, No. 80, each. ....	41
Reamer, No. 100, each. ....	41
Countersink, No. 13, each. .	20
Countersink, Nos. 14-15, each	27

### BLADES, SAW.

Wood.	
Atkins 30-in.	
Nos. ....	6 40 26
	\$8 90 \$9 45 \$5 40

### BLOCKS.

Wooden .....	45%
Patent .....	45%

### BLOW TORCHES (See Firepots).

### BOARDS.

Stove.	Per Doz.
Crystal, 33" .....	\$23 90

Wash.	
No. 760, Banner Globe (single) .....	per doz. \$5 25
No. 652, Banner Globe (single) .....	per doz. 6 75
No. 801, Brass King, .....	per doz. 8 25
No. 860, Single—Plain Pump .....	6 25

### BOLTS.

Carriage, Machine, etc.	
Carriage, cut thread, 1/2 x 6 and sizes smaller and shorter .....	50%
Carriage sizes, larger and smaller and shorter. ....	50-10%
Machine, 1/2 x 4 and sizes smaller and shorter. ....	50-5%
Machine, sizes larger and longer than 1/2 x 4. ....	50-10-5%
Stove .....	70-10%

### BRACES, RATCHET.

V. & B. No. 444 8 in. ....	\$4 54
V. & B. No. 222 8 in. ....	3 89
V. & B. No. 111 8 in. ....	3 55
V. & B. No. 11 8 in. ....	3 02

### BRUSHES.

Hot Air Pipe Cleaning.	
Bristle, with handle, each.	\$0 85
Flue Cleaning.	
Steel Only, each. ....	\$1 25

### BURRS.

Copper Burrs only. ....	40%
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### BUTTS.

Steel, antique copper or dull brass finish—case lots—	
3 1/2 x 3 1/2—per dozen pairs	\$3 12
4 x 4 .....	4 00

Heavy Bevel steel inside sets, case lots—	
.....per dozen sets	7 80

Steel bit keyed front door sets, each .....	1 90
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Wrought brass bit keyed front door sets, each. ....	3 25
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Cylinder front door sets, each .....	7 50
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### CEMENT, FURNACE.

American Seal, 5 lb. cans, net	\$ 45
" " 50-lb. cans, " "	90
" " 25 lb. cans, " "	2 00
Asbestos, 5 lb. cans, net. ....	45
Pecora .....	per 100 lbs. 7 51

### CHAINS.

Sher. Steel Safety Chain.	
500-ft. coil, per ft. ....	.01 1/2
100 to 500 ft., per ft. ....	.02
Less than 100 ft., per ft. ....	.02 1/2

Iron Jack Chains.	
Box (12 yds.) .....	45

### CHIMNEY TOPS.

Iwan's Complete Rev. & Vent. ....	30%
Iwan's Iron Mountain only. ....	35%
Standard .....	30 to 40%

### CHISELS.

Cold.	
V. & B. No. 25, 1/4 in. ....	\$0 26
V. & B. No. 25, 1/2 in. ....	41

Diamond Point.	
V. & B. No. 55, 1/4 in. ....	0 31
V. & B. No. 55, 1/2 in. ....	0 48

### Firmer Bevelled.

Round Nose.	
V. & B. No. 65, 1/4 in. ....	0 29
V. & B. No. 65, 1/2 in. ....	0 40

### Socket Firmer.

Cape.	
V. & B. No. 50, 1/4 in. ....	0 31
V. & B. No. 50, 1/2 in. ....	0 57

### CHUCKS, DRILL.

Goodell's, for Goodell's Screw Drivers. ....	List less 35-40%
Yankee, for Yankee Screw Drivers .....	\$6 00

### CLAMPS.

Adjustable.	
No. 100, Door (Stearns) doz. ....	\$22 00

Carpenters'.	
Steel Bar. List price plus. ....	20%

Hose.	
Sherman's brass, 1/2-inch per doz. ....	\$9 48
Double, brass, 1/2-inch, per doz. ....	1 20

### CLINKER TONGS.

Front Rank, each. ....	\$1 75
Per doz. ....	18 00

### CLIPS.

Damper.	
Acme, with tail pieces, per doz. ....	\$1 25
Non Rivet tail pieces, per doz. ....	25

### COPPERS—Soldering.

#### Pointed Roofing.

3 lb. and heavier. ....	per lb. 40c
2 1/2 lb. ....	" 45c
2 lb. ....	" 48c
1 1/2 lb. ....	" 55c
1 lb. ....	" 60c

### CORD.

No. 7 Std. per doz. banks. ....	\$11 00
No. 8 " " " " " " " "	12 50

### CORNICE BRAKES.

Chicago Steel Bending.	
Nos. 1 to 6 B. ....	10%

### COUPLING HOSE.

Brass. ....	per doz. \$2 20
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### CUT-OFFS.

Kuehn's Korrekt Kutoffs:	
Galv., plain, round or cor. rd.	Standard gauge .....
26 gauge .....	10%

### DAMPERS.

"Yankee" Hot Air.	
7 inch, each 20c, doz. ....	\$1 75
8 " " 25c, " " " "	2 40
9 " " 30c, " " " "	2 75
10 " " 32c, " " " "	3 00

Smoke Pipe.	
7 inch, each. ....	\$ 35
8 " " " " " "	40
9 " " " " " "	50
10 " " " " " "	60
12 " " " " " "	90

Reversible Check.	
8 inch, each. ....	\$1 50
9 " " " " " "	1 70

### DIGGERS.

Post Hole.	
Iwan's Split Handle (Eureka) 4-ft. Handle. ....	per doz. \$14 00
7-ft. Handle. ....	per doz. 35 00

Iwan's Hercules pattern, per doz. ....	14 90
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### DRILLS.

V. & B. Star, 12-inch Length.	
1/4, 5/16 and 3/8, each. ....	\$ 25
3/8, each .....	36
1, each .....	54
1 1/4, each .....	81

V. & B. Star, 18-inch Length.	
5/16 and 3/8, each. ....	\$ 32
3/8, each .....	45
1, each .....	59
1 1/4, each .....	1 05

### EAVES TROUGH.

Milcor	
Galv. Crimpedge, crated. ....	75%

### ELBOWS—Conductor Pipe.

Milcor	
Galv., plain or corrugated, round flat	
Crimp. Std. gauge. ....	65%
26 Gauge .....	40%
24 Gauge .....	10%

Square Corrugated.	
Milcor	
Standard gauge .....	50%
26 gauge .....	30%

Portico Elbows.	
Standard Gauge Conductor Pipe, plain or corrugated.	
Not nested .....	70 & 5%
Nested solid .....	70 & 5%

### ELBOWS—Steel Pipe.

1-piece Corrugated. Uniform.		Doz.
5-inch .....		\$1 45
6-inch .....		1 60
		2 10





*Illustrations show elbows of all angles from 10 to 90°.  
Note how close each cluster of elbows hugs the walls.*

Use short angle elbows to get around sills, cornice mouldings and all other projections, thus preventing the commonly known soldered break in the pipe.

By using combinations of this kind, soldering is not necessary as elbows fit into each other very snug and the small opening at the joints will permit sewer gases to escape, thus increasing the life of the entire spout.

These elbows are made in all designs and your dimensions can be arranged right on the job.

TRADE MARK  
**F. Dieckmann**

*This Emblem of Quality is stamped in each.*

**THE FERDINAND DIECKMANN COMPANY**  
P. O. Station B Cincinnati, Ohio

Uniform, Collar Adjustable.	
5-inch .....	Doz. \$2 00
6-inch .....	2 10
7-inch .....	2 60

**WOOD FACES—50% off list.**

FENCE.	
Field Fence .....	60%
Lawn " .....	53%

**FILES AND RASPS.**

Heller's (American) .....	60-5%
American .....	65-5%
Arcade .....	50-10%
Black Diamond .....	50-5%
Eagle .....	50-10%
Great Western .....	50-10%
Kearney & Foot .....	50-10%
McClellan .....	50-10%
Nicholson .....	50-10%
Simonds .....	60%

**FIRE POTS.**

Ashton Mfg. Co.	
Complete line	
Firepots and Torches.....	52%

Otto Bernz Co.	
No. 1 Furn. Gasolene with large shield, 1 gal.....	\$ 6 75
No. B Furn. Kerosene, 1 gal.....	15 12
No. 10 Brazier, Kerosene or Gasolene, 10 gals.....	47 52
No. 5 Torch, Gasolene or Kerosene, 1 pt.....	7 92
No. 33 Torch, Gasolene, 1 quart.....	5 40
No. 36 Torch, Gasolene, 1 pt.....	4 05

Clayton & Lambert's.	
East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Arizillo, San Angelo and Laredo, Texas .....	52%
West of above boundary line.....	48%

Geo. W. Diener Mfg. Co.	Ea.
No. 02 Gasolene Torch, 1 qt.....	\$ 5 55
No. 0250, Kerosene or Gasolene Torch, 1 qt.....	7 50
No. 10 Tinnern's Furn. Square tank, 1 gal.....	12 60
No. 15 Tinnern's Furn. Round tank, 1 gal.....	12 00
No. 21 Gas Soldering Furnace .....	3 60
No. 110 Automatic Gas Soldering Furnace .....	10 50

Double Blast Mfg. Co.	
Gasolene, Nos. 25 and 35.....	60%

Quick Meal Stove Co.	
Vesuvius, F.O.B. St. Louis .....	30%
(Extra Disc't. for large quantities)	

Chas. A. Hones, Inc.	
Buzzer No. 1.....	\$ 9 00
" " 2.....	12 00
" " 22.....	13 50
" " 42.....	15 00
" " 43.....	19 00

**FREEZERS—ICE CREAM.**

Peerless and Alaska	
1 quart .....	\$2 95
2 quart .....	3 45
3 quart .....	4 10
White Mountain	
1/2 quart .....	\$3 50
1 quart .....	4 90
2 quart .....	5 70

**GALVANIZED WARE.**

Pails (Competition), 8 qt.....	\$1 85
10-qt. ....	2 10
12-qt. ....	2 30
14-qt. ....	2 57
Wash tubs, No. 1.....	\$6 25
No. 2 .....	7 00
No. 3 .....	8 25

GARAGE DOOR HARDWARE.	
Stanley .....	All net

GAUGES.	
Marking, Mortise, etc.....	Nets
Wire.	
Disston's .....	25%

**GIMLETS.**

Discount .....	65% and 10%
----------------	-------------

**GLASS.**

Single Strength, A and B.	
all sizes .....	83 & 85%
Double Strength, A, all sizes	84%

**GREASE, AXLE.**

Frazers'	
1-lb. tins, 36 to case, per case .....	\$ 4 70
3-lb. tins, 24 to case, per case .....	7 80
5-lb. tins, 12 to case, per case .....	7 20
10-lb. tins, per dozen.....	10 40
15-lb. tins, per dozen.....	13 80
25-lb. tins, per dozen.....	19 80

**HAMMERS, HANDLED.**

All V. and B.	Each, net
Blacksmiths' Hand, No. 0, 26-oz. ....	\$1 00
Engineers' No. 1, 26 oz. ....	1 00
Farrier's, No. 7, 7-oz.....	93
Machinists', No. 1, 7-oz.....	78

**Nail.**

Vanadium, No. 41, 20-oz. each .....	1 59
Vanadium, No. 41 1/2, 16-oz. each .....	1 59
V. & B., No. 11 1/2, 16-oz. each .....	1 01
Garden City, No. 11 1/2, 16-oz., each .....	75

Tinner's Riveting, No. 1, 8-oz., each .....	79
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Shoe, Steel, No. 1, 18-oz. each .....	65
---------------------------------------	----

Tack.	
Magnetic.	
No. 5, 4-oz., each .....	81

**HAMMERS, HEAVY.**

Farrier's, No. 10, 10-oz. ....	\$1 01
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**HANDLES.**

Axe.	
Hickory, No. 1.....per doz.	4 00
Hickory, No. 2.....	3 00
1st quality, second growth	6 00
Special white, 2nd growth	5 00

Chisel.	
Hickory, Tanged, Firmer assorted .....	per doz. 55c
Hickory, Socket, Firmer, Assorted .....	per doz. 70c

File .....	per doz. \$1 20
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Hammer and Hatchet.	
No. 1 per doz.....	\$0 90
Second Growth hickory, per doz. ....	1 50

Soldering.	
Per doz. ....	\$2 40

**HANGERS.**

Conductor Pipe.	
Milcor Perfection Wire.....	25%

Eaves Trough.	
Steel hangers .....	30%
Triple Twist wire .....	10%
Milcor Eclipse Wire .....	20%
Milcor Triplex Wire .....	15%
Milcor Milwaukee Extension.....	15%
Milcor Steel (galv. after forming) List plus .....	12 1/2%
Milcor Selflock E. T. Wire, List plus .....	40%

**HASPS.**

Hinge, Wrought, with staples.	Net
-------------------------------	-----

**HATCHETS.**

V. and B. Supersteel.	Each
Broad, No. 1, 24-oz.....	\$1 43
Half, No. 1, 15-oz.....	1 25
Half, No. 3, 27-oz.....	1 37
Claw, No. 1, 19-oz.....	1 31
Flooring, No. 1, 20-oz.....	1 43
Shingling, No. 1, 17-oz.....	1 20
Lathing, No. 1, 14-oz.....	1 20
Lathing, No. 2, 17-oz.....	1 25

Vanadium Steel.	
Half, No. 62, 22-oz.....	\$1 82
Underhill Pattern Lathing, 9 row, 19 oz. ....	2 29

**HINGES.**

Heavy Strap, in Bundles.	
4 inch, dozen pra. ....	\$1 12
5 " " " .....	1 57
6 " " " .....	1 93
8 " " " .....	3 21

Extra Heavy T in Bundles.	
4 inch, dozen pra. ....	\$1 74
5 " " " .....	1 85
6 " " " .....	2 31
8 " " " .....	3 95

**HOES.**

Garden .....	Net
--------------	-----

**HOOKS.**

Box.	
V. and B. No. 9, each.....	\$0 26

Conductor.	
Milcor .....	
"Direct Drive" Wrought Iron for wood or brick .....	15%

Cotton.	
V. and B. No. 8, each...	24

Hay.	
V. and B. No. 1, each..	26

**Bar Meat.**

V. and B. No. 26, 1/2", each .....	09
V. and B. No. 28, 1/2", each .....	16

**Screw Meat.**

V. and B. No. 2, per gro.	6 50
---------------------------	------

**Butchers' "S."**

V. and B. No. 6, each..	08
V. and B. No. 8, each..	11

**HOSE.**

Per Ft.	
1/2-in. 2 ply molded.....	9 1/2c to 12 1/2c
1/2-in. cord .....	8 1/2c to 10c
1/2-in. wrapped .....	13 1/2c

**HUMIDIFIERS.**

"Front-Range," Automatic.	
In single lots .....	50%
In lots of 10 or more.....	50-5%
In lots of 25 or more.....	50-10%
Vapor pans, etc., each.....	50%

**IRONS.**

Sad.	
Genuine Mrs. Potts, nickel plated, per set .....	\$1 55
Asbestos No. 70, per set.	2 10
Asbestos No. 100, per set.	2 30
E. C. Stearns'.	
No. OA Corner, doz. sets.....	\$2 50
No. OB " " " .....	2 75

**KNIVES.**

Butcher.	
Beechwood Handles, 6-inch blade .....	25%
Beechwood Handles, 7-inch blade .....	25%
Beechwood Handles, 8-inch blade .....	25%

Cooper's Hoop .....	25%
---------------------	-----

Drawing.	
Standard .....	25%
Adjustable .....	25%
Barton's Carpenters' .....	25%

**Hay.**

Iwan's Solid Socket.....	25%
Heath's .....	25%
Iwan's Sickle Edge .....	25%
Iwan's Imp'd Serrated.....	25%

**Hedge.**

Challenge .....	25%
Disston's No. 1 .....	25%

**Patty.**

Common .....	25%
Lander's .....	25%

**Scraping.**

Beech Handles .....	25%
Lander's .....	25%

**KNOB.**

Door.	
Mineral .....	per doz. \$2 00
Porcelain .....	" 2 00
Jet .....	" 2 00

**LADDERS.**

Step.	
Common, per ft. ....	23c
Common, with Shelf, add 10c	
IXL .....	34c
Challenge, 6 to 9 ft.....	55c
10 to 16 ft. ....	60c
Kant-Break, per lineal ft.....	75c

**LANTERNS.**

Per doz.	
Monarch tin, hot blast.....	\$ 8 25
Diets No. 2 cold blast.....	13 00
Best tubular .....	8 25
Competition lanterns No. 0	
tubular .....	6 90

**LAWN MOWERS.**

12-inch .....	\$5 20
16-inch .....	5 85

Ball Bearing.	
4 blade, adjustable bearing.	
14" .....	\$5 20
16" .....	7 80

**LEATHER BELTING.**

From No. 1 Oak Tanned Butts.	
Extra heavy, 18-oz.....	35%
Heavy, 16-oz.....	40%
Medium, 14 1/2-oz.....	40%
Light, 13-oz.....	50%

**LEATHER LACING.**

Cut, strictly No. 1.....	45%
--------------------------	-----

**LEVELS.**

Disston, No. 28 Asst.....	\$22 05
" " No. 18, 20 in., each .....	1 33
" " No. 22, 24 in., each .....	3 40
" " Shafting, 6 in.....	19 30
" " " 6 in. gr. glass .....	24 20
" " No. 1 Asst.....	5 75
" " No. 2 Asst.....	12 40
" " 24-26 in., each.....	1 02
" " 28-30 in., each.....	1 00

**LIFTERS.**

Stove Cover.	
Coppered .....	per gro. \$6 00
Alaska .....	4 75

**LOCKS.**

Barn Door.	
No. 60 Stearns'.....	per doz. \$11 00
No. 80 " .....	20 00

**MALLETS.**

Carpenters'.	
Fibre Head No. 2, per doz.....	\$12 00
" " No. 3, " .....	15 50
" " No. 3 1/2, " .....	20 50
Round Hickory, per .....	doz. \$3 00—5 00
Tinners'.	
Hickory .....	per doz.\$2 25

**MATS.**

Door.	
National Rigid.....	5 & 10 & 5%
Acme Steel Flexible.....	50%

**MITRES.**

Galvanized steel mitres, and caps, end pieces, outlets.....	30%
Milcor .....	
Galv. one piece stamped.....	40%

**MOPS.**

Cotton, Star (Cut Ends).	
Pounds 12' 15' 18' 24'-3-oz.	
Per doz. \$4 00 4 35 5 50 7 00	
Enterprise .....	16 1/2%
Parker .....	50 & 5%

**NAILS.**

Cut Steel .....	\$4 70
Cut Iron .....	4 70

Wire.	
Common .....	3 20
Cement Coated .....	3 40

**NETTING, POULTRY.**

Galvanized before weaving .....	45-10%
Galvanized after weaving .....	45%

**NIPPERS.**

Nail Cutting.	
V. & B. No. 20.....	73c

Double Duty.	
V. & B. No. 60.....	76c

**Hoof.**

Heller's .....	40 & 10%
V. & B. No. 52, each.....	\$2 25

**NOZZLES.**

Hose.	
Diamond .....	5 75
Magic .....	per doz. \$9 50

**OILERS.**

Chase Pattern.	
Brass and Copper.....	10%
Zinc Plated .....	40 & 5%

Railroad.	
Brass .....	20 & 5%
Coppered .....	50 & 5%

**Steel.**

Copper Plated .....	70 & 5%
---------------------	---------

**OPENERS.**

Delmonico .....	per doz. \$1 30
Never Slip.....	" 60

**Crate.**



*The Best Eaves Trough  
Miter in the  
World*

Ask  
your Jobber for  
**CHAMPION MITERS & ENDS**  
~ all Dependable Products ~

**CHAMPION PRODUCTS**

**BRADEN MFG. CO. TERRE HAUTE INDIANA**

**CORTRIGHT METAL SHINGLE**

*Dipped in Molten Zinc after being cut and formed.  
This gives*

**Cortright Hand Dipped Shingles**  
a coating on all edges as well as both sides.  
We will be glad to send our book, "Concerning  
That Roof."  
It describes all the various patterns we make and  
all the different kinds of materials used.

**CORTRIGHT METAL ROOFING CO.**  
*Philadelphia Chicago*

**STANDARD SINCE 1887**



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Sheet Metal Ornaments  
and  
**STATUARY**

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**CHICAGO STEEL SLITTING SHEAR**  
**LIGHT—POWERFUL  
DURABLE**



Capacity 10 gauge sheets  
Any Length or Width  
Flat Bars 3/16 x 2"  
Weight 22 pounds  
Price \$12.50 Net  
F. O. B. Chicago

Made of pressed steel and equipped with hold-  
down. Blades of highest grade crucible steel  
Most indispensable high grade shears made. Equal to other shears sell-  
ing at over twice the price. **ORDER YOURS TODAY**

**DREIS & KRUMP MFG. CO., 2915 S. Halsted St., Chicago**

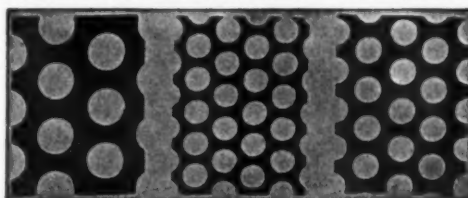
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should be**

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as an  
INLAND  
SHEET"**

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Chicago Heights, Ill. St. Paul

**PERFORATED METALS**



All Sizes and Shapes of Holes  
In Steel, Zinc, Brass, Copper, Tinplate, etc.  
For All Screening, Ventilating and Draining  
**EVERYTHING IN PERFORATED METAL**

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It runs in a self-lubri-  
cating bearing that is not  
affected by heat or cold.  
It is noiseless and pro-  
duces an upward current  
of air. No down draft.  
It will satisfy and give  
you a good profit.

**BERGER BROS. CO.**  
229 to 237 ARCH STREET  
WAREROOMS AND FACTORY: 100 TO 114 BREAD STREET  
PHILADELPHIA, PA.



<b>FAILS.</b>		<b>POKERS, STOVE.</b>		<b>SAWS.</b>		<b>Rivet.</b>	
<b>Cream.</b>		Wrt Steel, str't or bent.		Atkins No. 2, 14-in.....		V. & B.	
14-qt. with gauge.		.....per doz. \$9 50		" No. 2, 18-in.....		Farmers'.....	
18-qt. without gauge.		.....per doz. 11 00		" No. 7, 16-in.....		Tinners' 3-4.....	
20-qt. without gauge.		.....per doz. 11 75		" No. 2, 22-in.....		" 00-0.....	
<b>Sap.</b>		<b>POKERS, FURNACE.</b>		" No. 7, 20-in.....		<b>Saw.</b>	
10-qt., IC Tin.....per doz. \$4 00		Each.....\$0 50		" No. 7, 24-in.....		Atkins No. 10.....per doz. \$3 50	
12-qt., " ".....per doz. 5 50		<b>PULLEYS.</b>		" No. 7, 28-in.....		" No. 12.....	
<b>Stock.</b>		Furnace Tackle.....per doz. \$0 60		<b>Compass.</b>		<b>SHEARS.</b>	
Galv. qts. 14 16 18 20		per gross.....6 00		Atkins No. 2, 10-in.....\$ 5 45		Nickel Plated, Straight, 6".....	
Per doz. \$9 75 10 75 12 75 14 50		" Screw (en- cased).....per doz. \$0 85		" No. 10, 10-in.....5 60		" " " 7".....	
<b>Water.</b>		<b>Ventilating Register.</b>		" Blades, No. 2, 10-in 3 25		Japanned, Straight, 6".....	
Galvanized qts. 10 12 14		Per gross.....\$9 00		" No. 2, 10-in. 3 30		" " " 7".....	
Per doz. \$5 75 6 50 7 25		Small, per pair.....0 30		<b>Cross-Cut.</b>		<b>SHEARS, TINNERS' &amp; MACHINISTS.</b>	
<b>PASTE.</b>		Large, per pair.....0 50		Atkins No. 221, 4-ft.....\$3 03		Viking.....\$22 00	
<b>Asbestos Dry Paste:</b>		<b>PUNCHES.</b>		" No. 221, 6-ft.....4 45		<b>Lennox Throatless.</b>	
200-lb. barrel.....\$15 00		Machine. Each		" No. 221, 8-ft.....6 07		No. 18.....35%	
100-lb. barrel.....8 00		V. & B., No. 11-13, 1 1/2x6.....\$0 19		<b>Hand.</b>		Shear blades.....10%	
35-lb. pail.....3 25		V. & B., No. 90, 3/4x9.....27		Copper Burrs only.....30%		(f.o.b. Marshalltown, Iowa.)	
10-lb. bag.....1 00		V. & B., No. 10, 3/4x10.....29		" No. 96, 20-in.....21 70		<b>Peerless Steel Squaring.</b>	
5-lb. bag.....55		V. & B., No. 1-6, 1/2x6.....12		<b>Hand and Rip.</b>		<b>Foot Power.</b>	
2 1/2-lb. cartons.....30		<b>Center.</b>		Atkins No. 54, 20-in.....\$19 50		No. 1-30", 18 ga. cap.....15%	
<b>PINCERS.</b>		V. & B., No. 50, 3/4x4.....\$0 14		" No. 54, 26-in.....24 40		No. 2-36", 18 ga. cap.....15%	
<b>All V. &amp; B.</b>		<b>Belt.</b>		" No. 53, 16-in.....18 10		No. 4-52", 18 ga. cap.....15%	
Carpenters', cast steel,		V. & B., No. 101-103.....\$0 24		" No. 53, 20-in.....22 90		No. 10-120", 22 ga. cap.....15%	
No. 6.....8 10 12		V. & B. No. 25, ass't.....3 80		" No. 53, 24-in.....26 60		No. 4A-52", 16 ga. cap.....15%	
Each \$0 43 \$0 52 \$0 61 \$0 71		V. & B., No. 25, ass't.....3 80		" No. 53, 28-in.....31 45		<b>Cast Iron Foot Power.</b>	
Blacksmiths', No. 10.....\$0 64		<b>Samson Line.</b>		" No. 53, 30-in.....34 15		No. 01, 30", 18 ga. cap.....15%	
<b>Conductor PIPE.</b>		No. 1 Hand { Doz. lots or less.....40%		<b>Keyhole.</b>		<b>Power Driven.</b>	
<b>"Interlock" Galvanized.</b>		No. 2 Hand { 3 doz. lots.....Less 40 & 5%		Atkins No. 1 complete.....\$3 10		(No. 100 Series, 2 Shaft Drive.)	
Crated and nested (all gauges).....60-20%		No. 4 Hand { 6 doz. lots or more.....Less 50%		" No. 2 complete.....3 70		No. 142-42", 18 ga. cap.....15%	
Crated and not nested (all gauges).....60-15%		No. 3 Bench { Less than doz. lots.....Less 25%		<b>Miter Box.</b>		(No. 200 Series, 2 Shaft Underneath Drive.)	
Square Corrugated A and B and Octagon.		Doz. lots or more.....Less 40%		Atkins No. 1, 4x20.....\$32 65		No. 242-42", 14 ga. cap.....15%	
29 Gauge.....60-10%		<b>Extra Punches and Dies for Samson:</b>		" No. 1, 5x22.....38 00		(No. 300 Series, 3 Shaft Underneath Drive.)	
28 ".....60-10%		No. 1 Hand { Less than doz. lots.....Less 25%		" No. 1, 6x22.....42 20		No. 342-42", 10 ga. cap.....15%	
26 ".....60-10%		No. 2 Hand { Doz. lots or more.....Less 40%		<b>Pruning.</b>		No. 372-72", 10 ga. cap.....15%	
24 ".....60-10%		No. 3 Bench { Less than doz. lots.....Less 25%		Atkins No. 20, 12-in.....\$ 8 45		(No. 500 Series, 3 Shaft Underneath Drive.)	
<b>"Interlock."</b>		Doz. lots or more.....Less 40%		" No. 10, 16-in.....18 15		No. 596-96", 10 ga. cap.....15%	
Crated and nested (all gauges).....60-20%		<b>PUTTY.</b>		<b>Wood.</b>		No. 600 Series, 3 Shaft Underneath Drive.)	
Prices for Galvanized Toncan Metal, Genuine O. H. Iron, Lyonmore Metal and Keystone C. B. on application.		Commercial Putty, 100-lb. kits.....\$3 55		Atkins No. 202.....\$ 7 19		No. 6120-120", 3/16" cap. 15%	
<b>Stove.</b>		<b>QUADRANTS.</b>		" No. 318.....8 75		<b>SHINGLES.</b>	
26 gauge, 5 inch E. C. nested.....\$17 00		Malleable Iron Damper.....10%		" No. 906.....15 50		Per Square	
26 gauge, 6 inch E. C. nested.....17 00		<b>FLOOR REGISTERS AND BORDERS.</b>		" No. 1509.....16 56		Zinc (Illinois).....\$18 00	
26 gauge, 7 inch E. C. nested.....19 00		Cast Iron.....25%		<b>Box.</b>		<b>SHOES.</b>	
28 gauge, 5 inch E. C. nested.....14 00		Steel and Semi-Steel.....40%		No. 6, six blades each.....25c		Milcor.	
28 gauge, 6 inch E. C. nested.....15 00		Baseboard.....40%		No. 6, each.....25c		Galv. Std. Gauge, Plain or	
28 gauge, 7 inch E. C. nested.....17 00		Adjustable Ceiling Ventilators.....40%		<b>Floor (Stearns).</b>		corg. round flat crimp.....65%	
30 gauge, 5 inch E. C. nested.....12 00		<b>Register Faces—Cast and Steel</b>		No. 10, each.....\$11 50		26 gauge round flat crimp.....40%	
30 gauge, 6 inch E. C. nested.....13 00		Japanned, Bronzed and Plated, 4x6 to 14x14.....40%		<b>SCREEN DOOR HINGES.</b>		24 gauge round flat crimp.....10%	
30 gauge, 7 inch E. C. nested.....15 00		Large Register Faces—Cast, 14x14 to 38x42.....60%		Cast Iron.....gross \$13 00		Conductor.....65%	
30 gauge, 7 inch E. C. nested.....15 00		Large Register Faces—Steel, 14x14 to 38x42.....65%		Steel.....9 50		<b>SHOVELS AND SPADES.</b>	
T-Joint Made up, 6-inch.....per 100 35 00		<b>ROOFING.</b>		<b>SCREWS.</b>		Coal.	
<b>Furnace Pipe.</b>		Per Square		Wood.		Hubbard's.	
Double Wall Pipe and Fittings.....40-10%		Best grade, slate surf. prep'd \$1 85		F. H. Bright.....80%		No. A B C D	
Single Wall Pipe, Round Pipe Fittings.....40-10%		Best talc surfaced.....2 20		R. H. Blued.....78%		1 \$16 00 15 10 14 45 13 70	
Galvanized and Black Iron Pipe, Shoes, etc. 40-10%		Medium talc surfaced.....1 50		F. H. Jap'd.....74%		2 16 35 15 60 14 85 14 10	
Milcor Galvanized.....40%		Light talc surfaced.....95		F. H. Brass.....76%		3 16 75 16 00 16 25 14 40	
Stanley Iron Bench.....Net		Red Rosin Sheeting, per ton \$72 00		R. H. Brass.....74%		4 17 10 16 35 16 60 14 85	
<b>PLIERS.</b>		<b>ROPE.</b>		<b>Sheet Metal.</b>		<b>Post Drains &amp; Ditching.</b>	
(V. & B.)		Cotton.		No. 7, 1/2 x 1/4, per gross \$0 55		Hubbard's.	
Nut, No. 3, each.....\$2 60		Sisal.		No. 10, 3/4 x 3/16, per gross 75		Size A B C	
" No. 5, each.....64		1st Quality, base.....13 1/2c		No. 14, 3/4 x 1/4, per gross 90		14".....\$17 15 \$16 40 \$15 65	
" No. 25, each.....69		No. 2.....12 1/2c		<b>SCREW DRIVERS.</b>		16".....17 50 16 75 16 00	
<b>Gas.</b>		Manila.		Uncle Sam Standard Head.		18".....17 85 17 10 16 85	
No. 7, each.....55		1st Quality standard brands.....15 1/2c		2 inches, each.....\$ 45		20".....18 20 17 45 16 70	
" No. 8, each.....61		No. 2.....14 1/2c		5 inches, each.....52		22".....18 55 17 80 17 05	
" No. 12, each.....87		Hardware Grade, per lb.....12 1/2c		8 inches, each.....68		<b>Alaska Steel.</b>	
<b>Lining or Crimping.</b>		<b>SETS.</b>		12 inches, each.....1 02		D-Handle.....per doz. \$1 50	
No. 35, each.....64		V. & B.		Uncle Sam Insulated Head.		Long Handle.....3 00	
<b>Button's Pattern.</b>		No. 100, in cardboard boxes.....doz. \$1 55		3 inches, each.....\$ 49		<b>SIFTERS.</b>	
No. 6 each.....61		No. 100, in wooden boxes, doz. 1 58		5 inches, each.....57		Genuine Hunters, doz.....\$2 50	
No. 8 each.....74		No. 30, assorted.....doz. 39		8 inches, each.....76		<b>SKATES.</b>	
<b>Double Duty, No. 106.....50</b>		No. 5, in cardboard boxes, doz. 1 25		12 inches, each.....1 14		Ice, Men's and Boys'. Per Pair	
<b>POINTS, GLAZIERS'.</b>		No. 5, in wooden boxes, doz. 1 30		<b>Nail.</b>		Key Clamp—rocker—bright finish.....\$ 76	
No. 1.2 and 3..per doz. pkgs. 65c		No. 100, in cardboard boxes.....doz. \$1 55		V. & B.		Key Clamp—rocker—nickel finish.....1 10	

## ART METAL CEILINGS AND SIDE WALLS

QUALITY—DURABILITY—BEAUTY

Are thoroughly combined in **FRIEDLEY-VOSHARDT ART METAL CEILINGS AND SIDE WALLS**. We have added to our list a great number of new and handsome designs. Special designs can be made if desired. Only the *best* of materials used. We are prepared to serve *you*. Ceiling Catalog No. 33 on request.

**DONT DELAY—WRITE TODAY**

**FRIEDLEY-VOSHARDT CO.**

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Factory:

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761-771 Mather Street

CHICAGO, ILLINOIS

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THE design of the deflector brings the wind diagonally upward over the chimney opening through opening in lower part of hood. This construction creates a good draft on any chimney.



Simple iron mountings. Sold without hood so you can make your own tops. Strong, inexpensive and easy swinging.

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SOUTH BEND, IND.

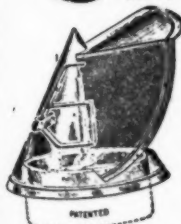
Manufacturers of Hardware Specialties



Hood  
Patterns  
FREE  
with  
order  
for  
iron  
mountings

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**Ventilator**



IS of the rotatable type and swings absolutely free in the slightest draft. The construction is scientifically correct and unusually strong. It works perfectly in all kinds of weather and handles 50% more air than stationary ventilators of equal size. Order from your jobber. Write for our catalog and prices today.

Manufactured by

**STANDARD VENTILATOR CO.**  
LEWISBURG, PA.

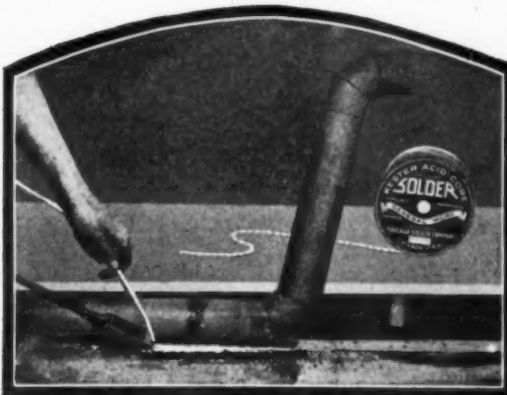
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620 South Michigan Avenue Chicago, Illinois

## "Sticks and Stays Stuck"



**PROPER** fluxing insures well-soldered joints.

Any job soldered with Kester Acid-Core Wire Solder "sticks and stays stuck," because inside the hollow wire of virgin tin and lead are tiny pockets holding a scientific flux prepared for general soldering.

On heavy work such as pictured above, Kester proves its real merit. The scientific flux chemically cleans the parts and permits the genuine tin and lead solder to take firm hold, the result is a permanently soldered job, finished in half the time required by the old-fashioned way.

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**KESTER**  
*Acid Core* WIRE SOLDER



*'Requires Only Heat'*



**SNIPS, TINNERS'.**

Clover Leaf .....	40 & 10%
National .....	40 & 10%
Star .....	50%
Milcor .....	Net

**SQUARES.**

Steel and Iron .....	Net
(Add for bluing, \$3.00 per doz. net.)	
Mitre .....	"
Try .....	"
Try and Bevel .....	"
Try and Mitre .....	"
Fox's .....	per doz. \$6 00
Winterbottom's .....	10%

**STAPLES.**

Blind .....	
Barbed .....	per lb. 21c@22c
Butter, Tub .....	16@19c
Fence—	
Polished .....	per 100 lbs. \$5 45
Galvanized .....	6 15
Netting .....	
Galvanized .....	per 100 lbs. \$6 54
Wrought .....	
Wrought Staples, Hasps and	
Staples, Hasps, Hooks and	
Staples, and Hooks and	
Staples .....	50 & 10%
Extra heavy .....	35%

**STONES.**

Axe .....	
Hindustan .....	per lb. New Nets
More Grite .....	"
Washita .....	"

Emery .....	
No. 126 .....	per doz. New Nets

Oil Mounted .....	
Arkansas Hard .....	
No. 7 .....	per doz. New Nets
Arkansas Soft .....	"
Washita No. 717 .....	"

Oil—Unmounted .....	
Arkansas Hard per lb. New Nets	
Arkansas Soft .....	"
Lily White .....	"
Queer Creek .....	"
Washita .....	"

Scythe .....	
Black Diamond per gro. New Nets	
Crescent .....	"
Green Mountain .....	"
LaMolle .....	"
Extra Quinine .....	"
bog .....	"
Red End .....	"

**STOPS, BENCH.**

No. 10 Morrill pat-	
tern .....	per doz. \$11 00
No. 11 Stearns pat	
tern .....	10 00
No. 15 Smith pat-	
tern .....	7 00

**STOPPERS, FLUE.**

Common .....	per doz \$1 10
Gem, No. 1 .....	1 10
Gem, flat, No. 3 .....	1 00

**STRETCHERS.**

Carpet .....	
Bullard's .....	per doz. \$3 90
Excelsior .....	5 25
Malleable Iron .....	"
Perfection .....	6 30
King .....	4 50

Wire .....	
O. S. Elwood, No. 1 per doz. Nets	
O. S. Elwood, No. 2 .....	"

**SWIVELS.**

Malleable Iron .....	per lb. \$0 10
Wrought Steel .....	per gro. \$4 50

**TACKS.**

Bill Posters' 6-oz., 25-lb.	
boxes, per lb. ....	15c
Upholsterers' 6-oz., 25 lb.	
boxes, per lb. ....	15½c

**TAPES, MEASURING.**

Asses' Skin .....	List & 40%
-------------------	------------

**THERMOMETERS.**

Tin Case .....	per doz 80c & \$1 25
Wood Backs .....	2 00 & 12 00
Glass .....	12 00

**TIES.**

Bale .....	
Single Loop, carload	
lots .....	75 & 7%
Single Loop, less than	
car lots .....	70 & 15%

**TRAPS.**

Mouse and Rat .....	Per Gross
Sure Catch Mouse Traps .....	\$2 50
Vim Mouse Traps .....	2 50
Short Stop Mouse Traps .....	2 40
Wood Choker Mouse	
Traps, 4 hole .....	11 25

**Per Doz.**

Sure Catch Rat Traps .....	\$0 85
Dead Easy Rat Traps .....	0 90
Packed in One Bushel Band Stave	
Baskets .....	

**List per Bushel**

Sure Catch Mouse Traps	
(360 Traps) .....	\$6 25
Short Stop Mouse Traps	
(360 Traps) .....	6 00
Sure Catch Rat Traps (54	
Traps) .....	3 90
Short Stop Rat Traps (54	
Traps) .....	3 75

**Assorted Mouse and Rat Traps.****List per Bushel.**

Sure Catch (216 Mouse	
Traps and 26 Rat	
Traps) .....	\$5 65
Short Stop (216 Mouse	
Traps and 26 Rat	
Traps) .....	5 40

**TROWELS.**

Cement .....	
Atkins No. 6 .....	\$19 50
No. 9 .....	25 50

**TWINE.**

White Cotton .....	
Eureka, 4-ply .....	per lb. 30c
Jute .....	
Cattle Wire—Galvanized	
catch weight spool, per	
3-ply and 6-ply Bale Lots	22½c

**VALLEY.**

Milcor .....	
Galv. formed or roll .....	60%

**VENTILATORS.**

Standard .....	30 to 40%
----------------	-----------

**VICES.**

No. 700 Hand .....	
Inches .....	4½ 5 5½
Doz. ....	\$11 15 13 00 14 85
No. 701. In. 4 .....	5 6
Doz. ....	\$11 15 13 00 16 70
No. 1, Genuine Wentworth,	
Noiseless Saw .....	per doz. 9 25
No. 3, Genuine Wentworth,	
Noiseless Saw .....	per doz. 12 75
No. 500, All Steel Folding	
Saw .....	per doz. 16 00

**WASHERS.**

Over ½ in. barrel lots	
per 100 lbs. ....	\$6 25
Iron and Steel .....	
In. 5/16 ¾ ¾ ¾ ¾	
10¼c 9¼c 7¼c 7¼c 7 2/5c	

**WEATHER STRIPS.**

Metallic Stitched .....	
½ in., per 100 ft. ....	\$1 80
¾ in., per 100 ft. ....	2 20

Wood and Felt .....	
¾ in., per 100 ft. ....	\$1 56
¾ in., per 100 ft. ....	1 56

**WEIGHTS.**

Hitching .....	per lb. Nets
Sash—f. o. b. Chicago	
Smaller lots, per ton .....	\$47 50

**WHEEL BARROWS.**

Common Wood Tray .....	\$3 75
Steel Tray, Competition .....	4 50
Steel leg, garden .....	6 00

**WIRE.**

Plain annealed wire, No. 8	
per 100 lbs. ....	\$3 70
Galvanized barb wire, per	
100 lbs. ....	4 10
Wire cloth—Black painted,	
12-mesh, per 100 sq. ft. ....	2 35
Cattle Wire—galvanized	
catch weight spool, per	
100 lbs. ....	4 60
Galvanized Hog Wire, 80 rod	
spool, per spool .....	3 98
Galvanized plain wire, No. 9,	
per 100 lbs. ....	4 15
Stove Pipe, per stone .....	1 10

**WOOD FACES.**

50% off list.

**WRENCHES.**

Coes Steel Handle, 6-in. ....	40-10%
" " " 8-in. ....	40-10%
" " " 10-in. ....	40-10%
" " " 12-in. ....	40-10%
Coes Knife-Handle, 6-in. ....	40-10%
" " " 8-in. ....	40-10%
" " " 10-in. ....	40-10%
" " " 12-in. ....	40-10%
Coes All Patterns .....	40-10%

**WRINGERS.**

No. 790, Guarantee per doz. ....	\$55 50
No. 770, Bicycle .....	52 50
No. 670, Domestic .....	48 50
No. 110, Brighton .....	43 50
No. 750, Guarantee .....	55 50
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